

Transmission Line Routing Permit Application

Faribault Energy Park, LLC
Minneapolis, MN

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Executive Summary

Faribault Energy Park, LLC (FEP) proposes to build a 250 megawatt (MW) electrical power generating station on 37 acres in the northern portion of the City of Faribault, between Interstate 35 and State Aid Highway 76. FEP makes this formal request for an alternative review of this Route Permit Application for approval to construct two 115-kilovolt (kV) high voltage transmission lines that would connect the power-generating substation to an existing 115kV high voltage power line that runs parallel to Interstate 35. FEP has identified two potential building sites for their generation facility. The preferred site has the existing 115 kV high voltage power line adjoining the west side of the power plant site approximately 400 feet from the proposed location of the substation. The alternate site has the existing 115 kV power line located to the west, approximately 1600 feet.

Both locations will have minimal impact on soils, water, vegetation and wildlife, human health, economics and cultural resources. However, the preferred site will have the lesser impact of the two possible locations due to the closer proximity.

Section 1

Introduction

Faribault Energy Park (FEP) hereby makes application to the Minnesota Environmental Quality Board (MEQB) for a Transmission Line Routing Permit Alternative Review from the provisions of the Power Plant Siting Act for the routing of transmission lines as provided in MN Statute 116C.575 Subd.2. (3). FEP is making an application for an alternative permitting process for the construction of two parallel 115 kV high voltage transmission lines (HVTL). FEP has identified two sites with the designation of a preferred site and an alternate site. The preferred site would have the transmission lines routed approximately 400 feet in length from the existing transmission lines to the FEP power generation facility. The alternate site would have the transmission lines routed approximately 1600 feet in length from the existing transmission lines to the FEP generation facility.

Statement of Ownership of the Proposed HVTL

Xcel Energy or FEP will construct the 115 kV transmission lines. Xcel will own, operate, and maintain the proposed 115 kV transmission lines and associated substation.

Permittee/Project Manager

The project is being proposed by Faribault Energy Park, LLC. The project contact is:

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Faribault Energy Park, LLC
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General Description of the Proposed HVTL and Associated Facilities

Project Location

The High Voltage Transmission Lines (HVTL) for the preferred site are located in the southwest $\frac{1}{4}$ of the northeast $\frac{1}{4}$ of Section 13, Township 110N, Range 21W. The alternate site is located east-northeast of the preferred site in the general southeast $\frac{1}{4}$ of the northeast $\frac{1}{4}$ of Section 13, Township 110N, Range 21W.

For the preferred site, the HVTL will start at the existing 115 kV transmission line and head east approximately 400 feet to the substation. For the alternate site, the HVTL will start at the existing 115 kV transmission line and head east approximately 1600 feet to the substation. Figure 1 is the general vicinity map showing both the preferred and alternate site locations. Figure 2 is the general vicinity map showing the preferred location. Figure 3 is the concept plan showing the preferred site with proposed transmission line route and Figure 4 is the concept plan showing the alternate site with the proposed transmission line route.

Summary of Project Proposal

The proposed project is to construct two parallel 115 kV transmission lines (approximately 400 feet for the preferred site or 1600 feet for the alternate site), connecting the new FEP generation facility to Xcel's existing transmission line.

Project Schedule

FEP proposes to have the new line available for service by January 1, 2005. The construction schedule is as follows:

Table 2-1 Project Schedule

Permitting	March to April 2004
Right-of-Way (ROW) Acquisition	May 2004
Survey	June 2004
Line Design	July 2004
Transmission Line Construction (start date)	August 2004

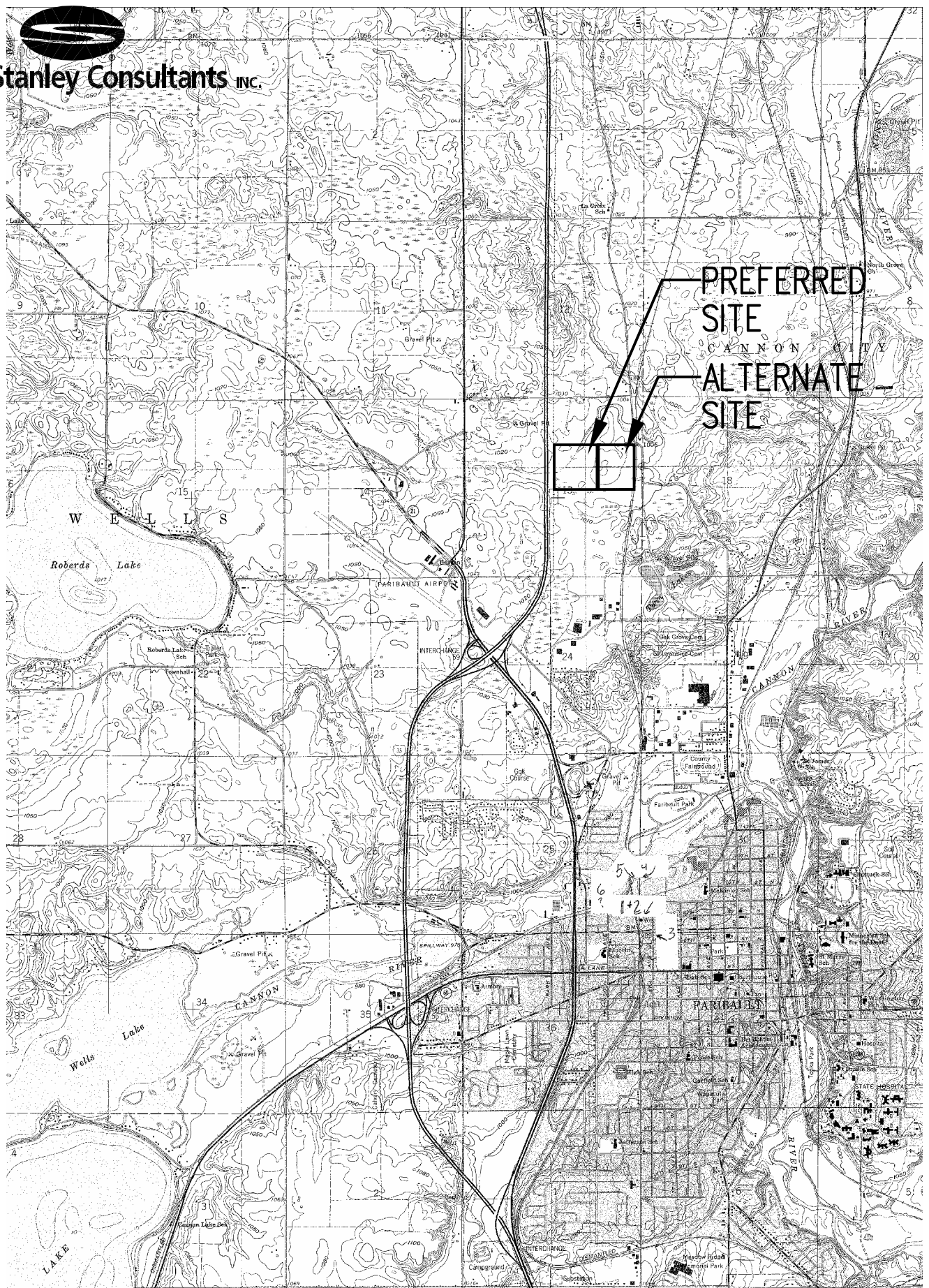
Summary of Project Costs

FEP's preliminary estimate of construction cost for the transmission line is:

115kV transmission line (preferred site)	\$75,000
115kV transmission line (alternate site)	\$200,000



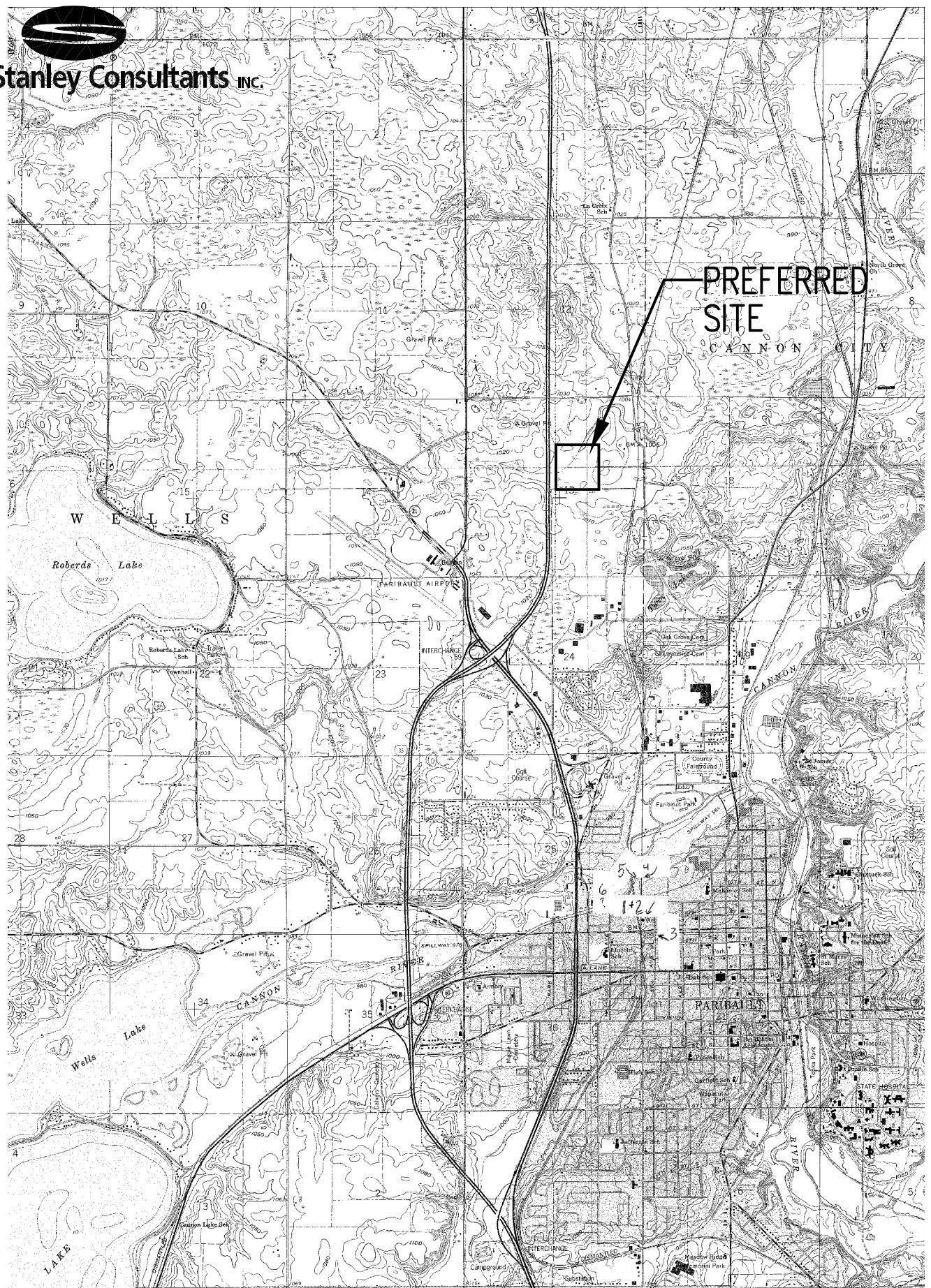
Stanley Consultants INC.



Vicinity Map
Figure 1



Stanley Consultants INC.



Vicinity Map
Figure 2



Engineering and Operational and Design Concepts and Right-of-Way Acquisition

Transmission Line

FEP proposes to construct six H-frame wood pole structures with guyed corner posts. The average span length will be approximately 180 feet. The height of the proposed structures will be approximately 60 feet. FEP proposes to construct structures similar to the existing transmission line to the adjacent main transmission line.

Route Description and Use of Existing Right of Way

The proposed transmission lines will be run perpendicular to the existing main transmission line in an easterly direction and connect to the FEP substation. The route distance for the preferred site is approximately 400 feet. The route distance for the alternate site is 1600 feet. Because of the route is new, there is no possibility of using existing right of ways to facilitate the process.

Transmission Capacity

The proposed transmission line design is dictated by the voltage and design of the existing line. The existing line is a 115 kV H-frame conductor, 477 MCM 26/7 ACSR (Hawk), rated at 702 amps, 140 MVA. Conceptual plans for the tap line to the generating station are 115 kV H-frame conductor, 795 MCM 26/7 ACSS (Drake), rated 1,556 amps, 310 MVA.

Overhead Structure Design Proposals

The conceptual structure design will be conventional utility wood H-frame pole construction.

Construction and Maintenance Procedures

Construction and mitigation practices are developed early in the project planning process and often rely on industry specific Best Management Practices (BMPs), which have been developed over the years in consultation with appropriate agencies, and the affected property owners. These BMPs have been developed for ROW clearance, erecting power poles, and stringing power lines. BMPs would likely include schedules for activities, prohibitions, maintenance guidelines, inspection procedures, and other practices. For example, in the case of wetlands such practices include avoiding wetlands, controlling soil loss, reducing water quality degradation, and minimizing the impacts on hydrologically connected surface and groundwater and on the plants and animals that the water supports.

ROW Acquisition: The preferred site is located in southwest $\frac{1}{4}$ of the northeast $\frac{1}{4}$ of Section 13, Township 110N, Range 21W. The alternate site is located east-northeast of the preferred site in the general southeast $\frac{1}{4}$ of the northeast $\frac{1}{4}$ of Section 13, Township 110N, Range 21W.

If the preferred site is used, no ROW easement acquisition is required as all construction will be on property owned by FEP. If the alternate site is selected, FEP will have to obtain an option for an easement from the landowner for the land required for construction that does not occur on FEP Owned property. The option for easement will be obtained prior to construction. The property owner will be contacted to discuss the construction schedules, access to the site and any possible tree clearing required for the project. The ROW clearing is generally limited to clearing vegetation that would impact the safe and reliable operation of the transmission line.

New Transmission Line Construction: Transmission structures are generally designed for installation at existing grades. Therefore, structure sites will not be graded or leveled, unless it is necessary to provide a reasonably level area for construction access and activities. Once construction is completed, any graded area will be restored to its original contour to the extent practicable.

For facilities that will have the structures directly embedded in the ground, the structures will be erected by augering or excavating a hole approximately 8 to 10 feet deep and 2 feet in diameter for each pole. The wood structures will then be set and the holes back-filled with a mixture of native soil and crushed rock.

After structures have been erected, conductors are installed by establishing stringing setup areas within the ROW. Conductor stringing operations will also require brief access to each structure to secure the conductor wire to the insulators or to shield wire clamps once final sag is established.

During construction, temporary removal or relocation of certain fences may occur, and installation of temporary (or permanent at land owner request) gates may be conducted. FEP will coordinate with the landowner for early harvest of crops where possible, and removal or relocation of equipment and livestock from the ROW may occur.

Restoration and Clean Up: Limited ground disturbance at the structure sites is anticipated during construction. A main marshaling yard for secure, temporary storage of materials and equipment will be established on FEP's property and will include sufficient space to lay down material and hardware. Disturbed areas will be restored to their original condition to the maximum extent practicable. Post-construction reclamation activities include cleaning up all construction sites, including removing and disposing of debris; removing all temporary facilities, including access trails, and staging and laydown areas, employing appropriate erosion control measures and reseeding disturbed areas (due to construction activities) with vegetation like that which was removed and restoring the areas to their original condition to the extent possible.

Once construction is completed, in the case of the alternate site, the landowner will be contacted by FEP to determine if any damage has occurred as a result of the utility's project. If damage has occurred to crops, fences, or the property, FEP will compensate the landowner for the damages caused. In some cases, an outside contractor may be contracted to restore the damaged property to as near as possible to its original condition. Since the entire construction will occur on FEP owned property in the case of the preferred site, only if the alternate site is selected will there be a need to coordinate restoration with another landowner.

Maintenance

Periodic access to the ROW of the completed transmission lines will be required to perform inspections and repair any damage. Regular maintenance and inspections will be performed during the life of the facility to ensure its continued integrity. Periodic inspections will be performed by ground personnel. Inspections will be limited to the ROW. If problems are found during inspection, repairs will be assigned to construction crews.

The ROW will continue to be managed to remove vegetation that interferes with the operation and maintenance of the line. The transmission lines vegetation management is typically reviewed on a five-year cycle. ROW clearing practices include a combination of mechanical and hand clearing, along with herbicide application to remove or control the growth of vegetation in some areas.

ROW Acquisition

FEP would need to obtain an easement from the landowner of the one privately owned parcel that would be affected by the routing of the transmission lines to the alternate site. If the preferred site were selected, construction would occur on property wholly owned by FEP.

Environmental Analysis

Description of Environmental Setting

The existing land uses along this route to either the preferred or alternate site are agricultural and currently being row cropped.

Human Settlement

Affected Environment

The project area is located in a row cropped agriculture farm field. The closest residence using the preferred site is approximately 700 yards to the northeast of the proposed transmission line. The closest residence if the alternate site were to be used would be 250 yards to the northeast of the proposed transmission line.

Potential Impacts

There will not be any impacts to human settlement.

Mitigative Measures

Mitigative measures are not necessary since there are no impacts.

Displacement / Demographics

Affected Environment

The construction of the project on the preferred site would result in no displacement of any persons. The preferred site is currently farmland and one owner owns the land. FEP has executed a purchase agreement for the purchase of this property. Should the alternative site be selected, it is likely the nearest receptor would desire his property be purchased, resulting in the displacement of one person. In addition, this would result in an incrementally higher cost to acquire this land.

The potential project area is within the City of Faribault city limits. According to the United States Census Bureau 2000 census, the population of Faribault was 20,818. There are 10,751 males and 10,067 females. The population consists of the following, 89.9 percent of the population is white, 2.7 percent African American, 0.7 percent Native American, 1.8 percent Asian, 0.1 percent Native Hawaiian or other Pacific Islander, 3.3 percent is some other race, and 1.5 percent are two or more races. The major industries in Faribault are manufacturing and educational, health and social services. The median family income for Faribault in 1999 was \$49,662.

Potential Impacts

The proposed project will not displace any of the population along the proposed ROW. Impacts to demographics are not anticipated.

Mitigative Measures

Mitigative measures are not necessary since impacts are not anticipated.

Noise

Affected Environment

A variety of sources in natural, industrial, and community settings generate sound/noise. Sound is defined as the result of the vibration of millions of air molecules traveling in waves to our ears. Sound waves move outward from the vibrating source, weaken, and may be reflected or bent by obstacles as they travel. Each sound wave has a different frequency, or rate of speed. Humans are only able to hear sound that falls between 30 to 12,000 cycles per second. In general, noise is defined as unwanted sound. Hearing damage is the most serious effect of noise, but the nuisance of particular sound characteristics may diminish the quality of life for those affected by the noise. Sound/noise is measured using a unit known as a decibel (dB).

Distance is a main criteria for measuring the strength of noise. For every doubling of distance from the noise source, a decrease of 6dB occurs from isolated sources. When studying noise originating from a continuous line, the dB level decreases by 3dB for every doubling of distance. This is the case when considering transmission lines.

Minnesota Rules Part 7030.0040, subpart two outlines the standards followed for noise pollution control. The regulatory agency responsible for the formation and implementation of these standards is the MPCA. These standards, according to the definition of land use activities, demonstrate consistency with the requirements for annoyance, hearing, and conversation, and sleep for all receptors within these areas classified as such.

In addition to the Minnesota Rules, the MPCA has also produced numerous noise area classifications (NAC) and the standards for each. These classifications are based on what activity is being conducted at the location of each receiver. The noise standard is then classified according to the listed NAC.

There are four noise area classifications as determined by the MPCA. NAC-1 applies to household units, hospitals, religious services, correctional institutions, and entertainment

gatherings. NAC-2 land use activities consist of mass transit terminals, automobile parking, and retail trade. Some of the NAC-3 described land uses are manufacturing facilities, highway and street right-of-way, and utilities. Undeveloped and under construction land use areas compose NAC-4.

Corona Noise: Transmission conductors produce noise under certain conditions. The level of noise or its loudness depends on conductor conditions, voltage level, and weather conditions. Generally, noise levels during operation and maintenance of transmission lines is minimal.

Potential Impacts

In summary, noise impacts from the proposed construction are incremental and not significant. Noise emission from a transmission line occurs during heavy rain and wet conductor conditions. In foggy, damp, or rainy weather conditions, power lines can create a subtle crackling sound due to the small amount of the electricity ionizing the moist air near the wires. During heavy rain the general background noise level, rain falling and wind blowing, is usually greater than the noise from the transmission line. In these conditions, very few people are out near the transmission line. For these reasons audible noise is not noticeable during heavy rain. During light rain, dense fog, snow, and other times when there is moisture in the air, the proposed transmission lines will produce audible noise higher than rural background levels but similar to household background levels. During dry weather, audible noise from transmission lines is a barely perceptible, sporadic crackling sound.

Mitigative Measures

Mitigative measures are not necessary since the impacts are not significant.

Aesthetics

Affected Environment

The affected environment is rural and consists of row cropland with sporadic farmsteads. The proposed transmission lines will tap into an existing line. The FEP will be located east of the transmission lines, and will be seen from a few nearby residences and Interstate 35 is adjacent to the property.

Potential Impacts

The transmission lines will consist of two, 115 kV lines that will be placed approximately 75 feet apart from one another. However, the line will connect an energy generating facility with an existing transmission line so the visual impacts will not be significant. The visual impact to the nearest residence will also be insignificant because it is located almost one-half mile from the lines. A substation will also be constructed adjacent to and west of the FEP facility. The transmission line will connect to the substation.

Mitigative Measures

Mitigative measures are not necessary since the impacts are not significant.

Recreation

There are numerous state parks and recreation areas throughout the state of Minnesota. Several of these sites are located near the city of Faribault, in the southeast portion of the state. The MDNR was contacted and provided information about state parks and resources in the project area (MDNR, oral communication, September 2002). Sakatah Lake, Nerstrand Big Woods, and Rice Lake are near Faribault and the project site. Sakatah Lake is 14 miles west of Faribault and offers biking, hiking, and camping. Nerstrand Big Woods is about nine miles northeast of Faribault and offers hiking and camping. Rice Lake is located southeast of Faribault and offers canoeing and bird watching. In addition, there is a MDNR area office approximately one mile to the south of the project site.

Affected Environment

There are no state or county land, Nature Conservancy Preserves, or State and regional trails along the proposed transmission line route.

Potential Impacts

Because there are no public lands along the proposed transmission line route, impacts to public recreational areas are not anticipated.

Mitigative Measures

The proposed transmission line will not impact any public lands along the designated route; therefore, no mitigation is necessary.

Transportation

Affected Environment

The potential project area is located off Highway 76 to the west, south of 130th Street West, and east of Interstate 35. Roads near the Project will be utilized as much as possible to reduce the area disturbed. These roads will be maintained as necessary, and provided with adequate drainage.

Rice County Highway Department has indicated that the 2001 average daily traffic for Highway 76 is 180 vehicles per day. Traffic counts for other roadways are not available (oral communication, Rice County, September 2002).

Depending upon the facility's exact location, paving may be required of up to ½ mile of existing roadway or construction of a new plant entrance road. The preferred site will require marginally more road construction for the actual construction phase of the project. At this time, the City of Faribault's exact plans for requirements for roadway construction and access in this planned industrial park are unknown. Any new roads will be constructed with the least amount of impact possible and according to necessary safety standards. Roads would be built and maintained to provide safe operation. The City of Faribault is in the planning process to develop the area near the proposed facility. This planning process involves the design of roadways in the area to provide access and enhance development. FEP is working closely with the City of Faribault in this planning process.

Potential Impacts

Traffic near the proposed facility will increase during construction. Local motorists would be temporarily inconvenienced by the increase in large construction vehicles on the roadways and possible delays in traffic. These roads could become damaged, but would be surfaced and maintained as necessary to provide suitable access to the generating facility. Traffic on local roads will increase during construction of the electric generating facility with anticipated 250 individuals traveling to the job site each day. This impact is expected to last during the construction period of 12 months. Traffic due to the construction workers could be expected to produce local impacts over a thirty-minute period at the beginning and end of the day and each time a change in shift occurs.

Traffic near the proposed facility will increase slightly during plant operation. A maximum of 13 individuals will work at the electric generating facility after it is in operation. In addition, truck traffic would be expected to increase slightly with truck deliveries to the electronic generating facility, primarily during short-term fuel oil deliveries to the facility. The electric generating facility will not burn fuel oil on an extended basis because of air permit limitations.

Mitigative Measures

Because impacts to traffic levels may only be slightly impacted during construction of the electric generating facility with only the addition of 13 full time employees after the electric generating facility is operational, no mitigation will be required. The construction of the transmission line will have minimal impact on traffic and no mitigation.

Land Use

Affected Environment

The proposed 115 kV HVTL will connect either the preferred FEP site or the alternate FEP site with the existing Xcel 115 kV transmission line located immediately west of the preferred or alternate FEP generation site or immediately east of Interstate 35. The new transmission lines will either be 400 feet in length from the preferred FEP site or 1600 feet in length from the alternate FEP site to the existing 115 kV transmission line. The existing land uses for either site is agricultural row crop. There are no prohibitive sites such as:

- National Parks;
- National historic sites and landmarks;
- National historic districts;
- National wildlife refuges;
- National monuments;
- National wild, scenic, and recreational river ways;
- State wild, scenic, and recreational rivers and their land use districts;
- State parks;
- Nature conservancy preserves;

- State Scientific and Natural Areas; and,
- State and national wilderness areas.

Potential Impacts

Land use will not be impacted for either site since the short transmission line is connecting a power plant to an existing transmission line.

Mitigative Measures

Since impacts are not expected, mitigative measure are not required.

Zoning

Affected Environment

The evaluated sites for the project are within the corporate city limits of the City of Faribault, and they are industrially zoned.

Potential Impacts

Either project site would be converted from agricultural land to an industrial park. This decreases the natural resources of the land, and has a negative effect on the current farmer, although the impacted landowner will be compensated at a much higher rate for his land than he otherwise might if he sold it for agricultural reuse. The presence of an electric power plant will have an unknown effect on local property values. The facility in combined cycle will have the ability to sell steam to industrial end-users, who might find it attractive to locate nearby to access this resource. If that should happen, land values in the immediate area should rise. Since the facility will have a minimal noise impact, with relatively low emissions, and will have low traffic following construction, impact on property values is expected to be low.

Mitigative Measures

Mitigative measures are not necessary.

Prime Farmland

Affected Environment

Prime farmland, as defined in CFR Title 7, 657.5 a, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops. Prime farmland is also available for other uses including cropland, pastureland, rangeland, forestland, or other land, but not urban build-up land or water. The Natural Resource Conservation Service (NRCS) classifies soils that are considered prime farmland.

In 2000, a soil survey was published for Rice County by the NRCS in cooperation with the Minnesota Agricultural Experiment Station. The survey contains a list of soils that are considered prime farmland in the county. About 186,726 acres, or nearly 57 percent of the Rice County area, meets the requirements for prime farmland.

Potential Impacts

In the preferred configuration, the transmission line poles will disturb approximately 114 square feet of land plus an additional small area of disturbance for the guy wires, while in the alternate configuration 161 square feet of land will be idled. The land is currently being farmed; a small portion of land around the poles and guy wires will be taken out of production.

Mitigative Measures

The small area around the poles and guys wires will be seeded to an annual grass. This will reduce and or eliminate any soil erosion.

Soils and Geology

Affected Environment

The potential project sites are in a geologic area with depth of unconsolidated materials up to 70-feet deep. Geologic formations consist of glacial till interlaced with variable quantities of glacial lake and glacial outwash materials. Much of the resulting soils are fine-grained and generally not very well drained. The specific conditions at the sites are typical of this area, made up of relatively poorly drained silt loams and loams.

According to the Rice County Soil Survey, four different soils are found within the project area sites. In Appendix A, Table A-5 details the soil types and the following summarizes the characteristics of the soils on the project area sites:

- **Cordova Clay Loam, 02 Percent** – A poorly drained soil with moderately slow permeability. This soil can be found on the micro lows of moraines.
- **Hayden Loam 2-6 Percent** – A well-drained soil with moderate permeability. This soil can be found on the summits of moraines.
- **Hayden Loam 6-12 Percent Eroded** – A well-drained soil with moderate permeability. This soil can be found on the back slopes and shoulders of moraines.
- **Glencoe Clay Loam, Depressional 0-1 Percent** – A very poorly drained soil with moderately slow permeability. This soil can be found in the depressions on moraines.

Potential Impacts

Construction will result in no disturbances to the bedrock geology of the site. The transmission line poles will disturb approximately 114 square feet of land plus an additional small area of disturbance for the guy wires. Soils exposed during construction may be vulnerable to erosion until stabilized. Some compaction of surface soils will result from the use of heavy construction equipment.

Past and current land uses have resulted in the disturbance of native soils. Therefore, the overall impact of the construction will be minimal.

Mitigative Measures

Impacts to geology are not anticipated; therefore, mitigative measures are not required.

Impacts to soils will be minimal; best management practices will be implemented if needed, however, no grading will be necessary during transmission line construction.

Vegetation and Forestry

Affected Environment

The vegetation located around the potential project area is primarily that of both a native prairie land and a deciduous, Maple-Basswood forest. Side-oats gramma, grayhead coneflower, purple coneflower, rough blazing star, and big blue stem are representative of the native prairie species. Some of the species found within the deciduous forest are sugar maple, red oak, basswood, and oak, and a few underlying shrubs.

Potential Impacts

Due to the fact that the land is already disturbed by agricultural activities, and that the Minnesota Department of Natural Resources (MN-DNR) did not identify any state - or federally - listed threatened or endangered species at the site, or within a one - mile radius of the site, it is not anticipated that the project would have a significant impact upon the species present in the project area.

There will be a small number of existing deciduous trees and shrubs cleared at the intersection of the existing transmission line and the new transmission line. The trees and shrubs will be cleared in this area to insure transmission line safety and reliability.

Little wildlife habitat will be permanently lost. All wildlife species that may be displaced are considered "common" in Minnesota, and their displacement would not be detrimental to their populations.

Mitigative Measures

Because the vegetation has been previously disturbed due to agricultural activities and impacts will be minimal, mitigative measures are not necessary.

Mining

Affected Environment

According to the Minnesota DNR Division of Land and Minerals, there is no mineral mining or areas of potential mines at the proposed transmission line corridor or facility site.

Potential Impacts

Since there is no mineral mining or "known but undeveloped resources" in the project area, the project has no potential impact on mineral mines.

Mitigative Measures

There are no mitigative measures required for mineral mining, since the project will have no potential impacts.

Archaeological and Historic Resources

Affected Environment

IMA Consulting, Inc. was retained to perform a Phase I Historical, Cultural, and Archaeological Resources evaluation of the potential project area. IMA Consulting shares a professional services agreement with its parent organization, the non-profit Institute for Minnesota Archaeology.

IMA Consulting, Inc. concluded the construction of the facility has no potential to impact significant historical, cultural, or archaeological resources in potential project area. Their report is provided in Appendix B.

Potential Impacts

Impacts to archaeological and historic resources are not anticipated.

Mitigative Measures

Mitigative measures are not necessary since impacts are not expected.

Air Quality

Affected Environment

During construction of the project, there will be emissions from vehicles and other construction equipment and fugitive dust from ROW clearing. Temporary air quality impacts caused by the proposed construction-related emissions are expected to occur during this phase of activity.

Fugitive dust may result from replacing the existing structures and any additional ROW clearing that may be required. The magnitude of these emissions is influenced heavily by weather conditions and the specific construction activity taking place. Exhaust emissions from primarily diesel equipment will vary according to the phase of construction but will be minimal and temporary.

Potential Impacts

There will be no significant adverse impacts to the surrounding environment because of the short and intermittent nature of the emission and dust-producing construction phases.

Mitigative Measures

Because there will be no significant adverse impacts relating to air quality, no mitigative measures are necessary.

Water Quality

Affected Environment

Currently, runoff from the existing field follows the slope of the land. Approximately 100 feet north (closest point from the transmission line) is a small stream that is lined with a wide area of tall grass.

Potential Impacts

There will be no grading required during construction of the transmission line; therefore, impacts to water quality are not expected.

Mitigative Measures

Mitigative measures are not necessary.

Groundwater**Affected Environment**

Because of the shallow depth of construction, no impact to groundwater is anticipated.

Potential Impacts

The transmission line poles will be set in the ground approximately 8 to 10 feet deep and 2 feet in diameter for each pole. This will not impact the water table levels.

Mitigative Measures

Mitigative measures are not necessary.

Floodplains and Wetlands**Affected Environment**

Six wetland areas were identified and delineated on the site of the future power generating facility at both the preferred and alternate building sites. Three of the wetlands are depressions and three are drainage ways. The total area for the three depressional wetlands is approximately 0.25 acres. Approximately 1.34 acres is included in the drainage way wetland. All of these areas are located on the western edge of the property. See Delineated Wetland Locations Figure 4-1 of Appendix C of the Wetland Screening Report.

Potential Impacts

Impacts to wetlands and floodplains are not anticipated.

Mitigative Measures

Because impacts are not anticipated, mitigative measures are not necessary.

Threatened and Endangered Species**Affected Environment**

The Minnesota Department of Natural Resources (MDNR) Natural Heritage Program and the USFWS have reviewed the project area within a one-mile radius for known occurrences of federal and state - listed threatened and endangered species and other significant natural features. Response letters from the MDNR and the USFWS, dated August 8, 2002, are included in Appendix C. The MDNR reviewed the Natural Heritage database, and it was determined that there are "no known occurrences of rare species or natural communities in the area" of the project. The USFWS stated, "...because of the location and type of activity proposed, this project is not likely to adversely affect any federally listed or proposed threatened or endangered species or their critical habitat."

Potential Impacts

Impacts to threatened and endangered species are not anticipated.

Mitigative Measures

Because impacts are not anticipated, mitigative measures are not necessary.

Fish and Wildlife Resources

Affected Environment

Wildlife inhabiting the project and adjacent area is typical of that found in rural areas of Rice County. The natural habitat within the project area is used by a variety of mammals including: eastern cottontail, striped skunk, whitetail deer, black bear, porcupine, eastern chipmunk, red fox, and several species of mice, squirrels, and weasels. Sandhill crane, heron, waterfowl, shore birds, red-winged blackbird, meadowlark, bobolink, red-tailed hawk, common gackle, and American kestrel are a few of the bird species found in and around the project area. Amphibians and reptiles located within the area include garter snakes, gray tree frogs, American toads, and the chorus frog (MDNR 2002).

The land is already disturbed by agricultural activities. Impacts on wildlife are expected to be minor. The loss of cultivated land will reduce food sources for deer, rabbit, squirrels, raccoons, and small mammals as well as some bird species. Direct wildlife losses from construction (animals or eggs destroyed by construction vehicles) will be confined to small mammals and the eggs, or young of ground nesting birds. These losses are expected to be minor. Aquatic life in area streams and drainage ways may be temporarily affected by increased silt loads if heavy rains occur before surface restoration is complete. Mitigative measures will be taken in accordance with applicable regulatory requirements to minimize this possibility. Any impacts to aquatic life are expected to be both minor and temporary.

Potential Impacts

The project will not have a significant impact upon the species present in the area. All wildlife species that may be displaced are considered “common” in Minnesota, and their displacement would not be detrimental to their populations.

Mitigative Measures

No mitigation measures are necessary because all wildlife species are considered “common” and their displacement would not be detrimental to their populations.

Human Health and Safety

Affected Environment

The proposed transmission line will be designed to meet or exceed all relevant State codes and the National Electric Safety Code. Appropriate standards will be met for construction and installation, and all applicable safety procedures will be followed after installation. The proposed transmission line would be equipped with protective devices to safeguard the public from the transmission line if an accident occurs and a structure or conductor falls to the ground. The protective equipment would de-energize the line when an event occurred. In addition, the substation facilities will be fenced and access limited to authorized personnel.

Potential Impacts

Electric and magnetic fields (EMF) arise from the flow of electricity and the voltage of a line. The intensity of the electric field is related to the voltage of the line and the intensity of the magnetic field is related to the current flow through the conductors. There is no state or federal standard for transmission line electric fields. However, in previous cases, the Minnesota Environmental Quality Board (MEQB) has imposed, in its transmission line permits, a maximum electric field limit of 8 kV/meter measured one meter above the ground. The restriction was designed to prevent serious hazard from shocks when touching large objects like a bus or combine parked under high voltage transmission lines, usually 345 kV or greater. The electric field of this project will not exceed 8 kV/meter. Many years of research on the biological effects of electric fields have been conducted on animals and humans. No association has been found between exposure to electric fields and human disease.

The possible effect of EMF exposure on human health has been a matter of public concern over the past few years. While the general consensus is that electric fields pose no risk to humans, the question of whether exposure to magnetic fields can cause biological responses or even health effects continues to be the subject of research and debate.

Mitigative Measures

The most current and exhaustive reviews of the health effects from power-frequency fields conclude the evidence of health risk is weak and do not support the allegation of a major public-health danger. The National Institute of Environmental Health Sciences (NIEHS) issued its final report on June 15, 1999, following six years of intensive research. It concluded that the scientific evidence that extra low frequency EMF exposures pose any health risk is weak. The NIEHS was the lead government agency in directing and carrying out a congressionally mandated research program on EMF.

The Minnesota Department of Health (MDH) issued “An Assessment of Health Effects Research on Electric and Magnetic Fields” in January of 2000. The MDH concluded the following:

“...the current body of evidence does not show that exposure to these fields is a health hazard. Specifically, no conclusive and consistent evidence shows that exposures to residential electric and magnetic fields produce cancer or any other adverse human health effect.

The current body of research lacks fundamental evidence to support a cause and effect relationship between magnetic fields and childhood leukemia. This conclusion is based on laboratory studies, which have failed to demonstrate adverse health effects or a plausible biological mechanism of causation (in vivo and in vitro).

As with many other environmental health issues, the possibility of a health risk from EMF cannot be entirely dismissed. The MDH considers it prudent public health policy to continue to monitor the EMF research and to support prudent avoidance measures, such as providing information to the public regarding EMF sources and exposure.”

Electric utilities monitor and review research on the EMF issue and where possible, incorporate these conclusions in its planning and operation of power lines and substations. There are currently no Minnesota regulations pertaining to magnetic field exposure. Electric utilities provide information to the public, interested customers and employees so they can make informed decisions about EMF. This includes measurements for customers and employees who request them.

Past decisions have reflected that the scientific data does not show any significant risk of health effects due to exposure to magnetic fields. Policy decisions have continued to support the construction of electric infrastructure, taking into consideration the most recent information available on the issue.

Radio and TV Interference

Corona on transmission line conductors can generate electromagnetic noise at the frequencies at which radio and television signals are transmitted. This noise can cause interference (primarily with AM radio stations and the video portion of TV signals) with the reception of these signals depending on the frequency and strength of the radio and television signal. However, this interference is often due to weak broadcast signals or poor receiving equipment. If interference occurs because of the power line, the electric utility is required to remedy problems so that reception is restored to its original quality.

Human and Natural Environmental Effects Which Cannot Be Avoided

The proposed HVTL project will impact the soil and local aesthetics. Soils will only be permanently disturbed at the location of poles and guy wires. All other soil impacts during construction will be temporary.

The transmission lines will impact local aesthetics. However, the project area is not heavily populated. The approved FEP electric facility will be constructed following issuance of an approved Site Permit by EQB and there is an existing 115 kV transmission line within the preferred site project area. If the alternate site is used, the existing transmission line is approximately 1600 feet to the west of the power generation site. The proposed transmission lines will connect the FEP electric generating facility to the existing Xcel 115 kV line. Since these are all connected facilities in the same project area, the visual impact is expected to be minimal.

Mitigation of unavoidable is not warranted based on the degree on the degree of impact, with is insignificant, or feasible using conventional technology.

Ultimate Abandonment and Restoration of the Right-Of-Way

The site will be valuable as long as it represents a convenient access to two major corridors of energy transportation: the electrical interconnection and the natural gas pipeline. At present, there is no foreseeable end to the use of these energy corridors. Therefore, it is unlikely that the site will ever be abandoned. Ongoing use and reuse of the site appears to be most likely.

Nonetheless, if the site were to be abandoned, the transmission poles and wires would be abandoned in accordance with customary and usual procedures.

Restoration and Clean Up. An FEP representative will contact the property owner after construction is completed to see if any damage has occurred as a result of the utility's project if the alternate project site is selected. If damage has occurred to crops, fences, or the property, FEP will compensate the landowner for the damages caused, if the alternate site is selected. If necessary, an outside contractor may be contracted to restore the damaged property to as near as possible to its original condition.

Maintenance. Periodic access to the ROW will be required to perform inspections perform maintenance, and repair any damage. The wood poles will require a thorough inspection every 12 years to ensure structural integrity.

Since the majority of the ROW is clear of trees due to a significant amount of row cropland, minimal clearing is expected to be required. In those areas where periodic clearing is needed, FEP will use either mechanical or chemical methods to remove the trees, depending upon the situation.

Agency Involvement, Public Participation, and Required Permits and Approvals

Overview of Minnesota Approval Process and Public Involvement

FEP is applying for a transmission line route permit under the Alternative Permitting Process provided for in Minnesota Rules, Draft Amendments Interim Guidance Adopted by EQB on October 18, 2001, and Chapter 4400.2000 Subpart 1.C. A summary of the Alternative Permitting Process is outlined below:

- The EQB chair reviews the application and determines whether the application is complete. The date of the chair's determination that the application is complete will mark the start of the schedule for the board to make a final decision on a permit application.
- Applicant provides notice of the project.
- Upon acceptance of the application for a route permit, the chair designates a staff person to act as the public advisor on the project.
- A public meeting is conducted by the EQB in a location near the project. The purpose of the meeting is to provide information about the project and the regulatory process to the public, to answer questions, and to receive comments on the scope of the environmental assessment (EA).
- The EA is prepared by the EQB for the HVTL.
- The EQB holds a public hearing once the EA has been completed. The hearing is held in a location near the project.
- The final decision to issue or not issue a permit is made by the Board. The Board may include conditions in the permit.
- The EQB will publish notice of its final permit decision in the State Register and EQB Monitor.

Local Agency Contacts

Refer to attached appendices for agency correspondence letters. The MDNR Natural Heritage and Non-game Research Program was contacted to review the Project area for state threatened and endangered species and rare natural features.

The SHPO was contacted to review the Project area for possible effects to known or potential sites of archaeological or historical significance.

The USFWS was contacted to review the Project area for federal threatened and endangered species. The area USFWS Manager was also contacted regarding native flora and fauna in the Project area.

Required Permits and Approvals

The EQB permit is the only permit required for construction of the HVTL. A Certificate of Need is not required for the project. The City of Faribault will issue a Conditional Use Permit for either the preferred or alternate site.

References

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3. City of Faribault, "Land Use Plan – West Side", 1998.
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<http://censtats.census.gov/data/MN/1602720546.pdf>
5. Davis, Mackenzie L. and Cornwell, David A., Introduction to Environmental Engineering, 3rd Edition, McGraw Hill Companies, 1998.
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8. http://www.niehs.nih.gov/emfrapid/html/EMF_DIR_RPT/NIEHS_Report.pdf
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 - State Parks, http://www.dnr.state.mn.us/state_parks/map.html
 - http://www.dnr.state.mn.us/state_forests/map.html
 - http://images.dnr.state.mn.us/education_safety/education/geology/digging/minmap.gif
10. Faribault Fire Department Information, http://www.faribault.org/fire_code/index.htm
11. Faribault Police Department information. <http://www.faribault.org/police/index.htm>
12. Correspondence
 - Aug 7, 2002 Rebecca Wooden Minnesota Department of Natural Resources
 - U.S. Fish & Wildlife Service

Appendix A

Wetland Screening Report

Wetland Delineation

MMPA Power Generation Facility

Faribault, Minnesota

Minnesota Municipal Power Agency

October 2002



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Section 1

Introduction

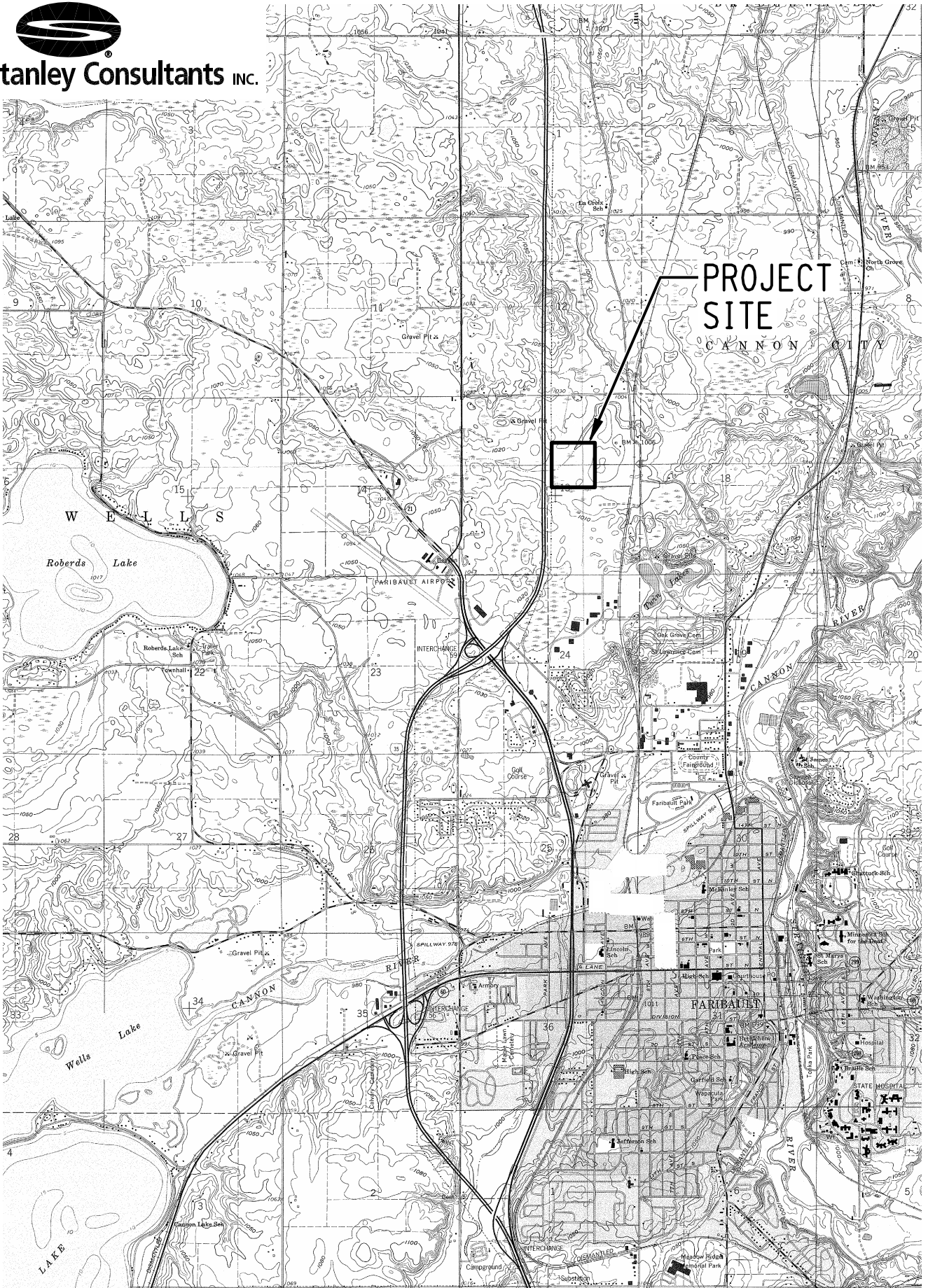
Background

Stanley Consultants, Inc. was retained by Minnesota Municipal Power Agency to conduct a wetland delineation on an approximately 37-acre site of a future power generating facility. The project site (see Figure 1-1) is located just north of Faribault, Minnesota, in Rice County.

Minnesota Municipal Power Agency is interested in delineating wetlands that may be disturbed or impacted by the future project so proper permitting and mitigation may be accomplished. Stanley Consultants' personnel visited the site on July 26 and 23 and September 13 and 26, 2002, and performed a wetlands evaluation in accordance with the United States Army Corps of Engineers (USACE) Wetlands Delineation manual (1987), and performed research as directed by that guidance. The results of this evaluation are contained within this report.



Stanley Consultants INC.



Vicinity Map
Figure 1-1

Regulatory and Technical Background

General

Recognizing the potential for continued or accelerated degradation of the Nation's waters, the US Congress enacted the Clean Water Act (hereafter referred to as the Act), formerly known as the Federal Water Pollution Control Act (33 U.S.C. 1344). The objective of the Act is to maintain and restore the chemical, physical, and biological integrity of the waters of the United States. Section 404 of the Act authorizes the Secretary of the Army, acting through the Chief of Engineers, to issue permits for the discharge of dredged or fill material into the waters of the United States, including wetlands.

The following definition, diagnostic environmental characteristics, and technical approach comprise a guideline for the identification and delineation of wetlands:

The USACE (Federal Register, 1982) and the Environmental Protection Agency (Federal Register, 1980) jointly define wetlands as: Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

Wetlands Diagnostic Environmental Characteristics

Wetlands have the following general diagnostic environmental characteristics:

- **Vegetation.** The prevalent vegetation consists of macrophytes that are typically adapted to areas having hydrologic and soil conditions described in wetlands. Hydrophytic species, due to morphological, physiological, and/or reproductive adaptations, have the ability to grow, effectively compete, reproduce, and/or persist in anaerobic soil conditions. Some species (e.g. *Acer rubrum*) having broad ecological tolerances occur in both wetlands and non-wetlands.

- **Soil.** Soils are present and have been classified as hydric or they possess characteristics that are associated with reducing soil conditions.
- **Hydrology.** The area is inundated either permanently or periodically at mean water depths <6.6 feet or the soil is saturated to the surface at some time during the growing season of the prevalent vegetation. The period of inundation or soil saturation varies according to the hydrologic/soil moisture regime and occurs in both tidal and non-tidal situations.

Except in certain situations defined in the USACE manual, evidence of a minimum of one positive wetland indicator from each parameter (vegetation, hydrology, and soil) must be found in order to make a positive wetland determination.

Non-wetlands Diagnostic Environmental Characteristics

The following definition, diagnostic environmental characteristics and technical approach comprise a guideline for the identification and delineation of non-wetlands: Non-wetlands include upland and lowland areas that are neither deepwater aquatic habitats, wetlands, nor other special aquatic sites. They are seldom or never inundated, or if frequently inundated, they have saturated soils for only brief periods during the growing season, if vegetated, and, they normally support a prevalence of vegetation typically adapted for life only in aerobic soil conditions.

Non-wetlands have the following general diagnostic environmental characteristics:

- **Vegetation.** The prevalent vegetation consists of plant species that are typically adapted for life only in aerobic soils. These mesophytic and/or xerophytic macrophytes cannot persist in predominantly anaerobic soil conditions. Some species, due to their broad ecological tolerances, occur in both wetlands and non-wetlands (e.g. *Acer rubrum*).
- **Soil.** Soils, when present, are not classified as hydric, and possess characteristics associated with aerobic conditions.
- **Hydrology.** Although the soil may be inundated or saturated by surface water or ground water periodically during the growing season of the prevalent vegetation, the average annual duration of inundation or soil saturation does not preclude the occurrence of plant species typically adapted for life in aerobic soil conditions.

When any one of the diagnostic characteristics identified above is present, the area is a non-wetland.

Prior Converted Cropland

Prior converted croplands (PC) are wetlands that were drained, dredged, filled, leveled, or otherwise manipulated, including the removal of woody vegetation, before December 23, 1985, to make production of an agricultural commodity possible, and that:

- Do not meet specific hydrologic criteria.
- Have had an agricultural commodity planted or produced at least once prior to December 23, 1985.
- Have not since been abandoned.

Activities in prior converted cropland are not regulated under Section 404. If prior converted cropland is not planted to an agricultural commodity for more than five consecutive years and wetland characteristics return, the cropland is considered abandoned and then becomes a wetland subject to regulation under Section 404.

Prior converted croplands generally have been subject to such extensive and relatively permanent physical hydrological modifications and alteration of hydrophytic vegetation that the resultant cropland constitutes the "normal circumstances" for purposes of Section 404 jurisdiction. Consequently, the "normal circumstances" of prior converted croplands generally do not support a "prevalence of hydrophytic vegetation" and as such are not subject to regulation under Section 404. In addition, our experience and professional judgment lead us to conclude that because of the magnitude of hydrological alterations that have most often occurred on prior converted cropland, such cropland meets, minimally if at all, the Manual's hydrology criteria.

Site Information

Site Description

The parcel of land on which the future project will be located is in the southwest ¼ of the northeast ¼ of Section 13, Township 110N, Range 21W in Rice County, Minnesota. A vicinity map showing the location of the site is presented in Figure 1-1. Approximately 37 acres of land is included within the scope of the delineation as shown on Figure 3-1.

Except where drainageways are present, the entire parcel was actively farmed in 2002 with row crops (corn and soy beans). Crops have been planted generally from fence row to fence row.

Area Hydrology

The site is relatively flat with a deep drainageway that enters the site from the west at the outlet end of an 84"x60" CMP culvert pipe under I-35, passes through the site, and exits the site in the northeast corner. This drainageway is tributary to the Cannon River. Other minor drainageways are present and flow into the main drainageway. They include one along a portion of the south and west property lines and another in the northwest portion of the site. A low rise aligned north and south is present along the eastern side of the site with a slight down grade to the west towards the deep drainageway that flows northeasterly through the site. Land adjacent to the southern edge of the property is lower with depressional areas observed. It appears some surface runoff occurs from the adjacent property into the drainageway along the south property line.

The main drainageway appears to have at least semi-permanent water in it since minnows and frogs were observed. The drainageway through the site is uniform in shape with a bottom width of about 9 feet and a top width of about 24 to 26 feet. It is approximately 5 feet deep near the west property line and 4 feet deep near the north property line. A 20-foot long 5-foot diameter riveted steel culvert provides a drainageway crossing for farm equipment at the north property line. The appearance of the drainageway combined with inspection of historical aerial photographs indicates that the drainageway was channelized sometime in the past.



Stanley Consultants INC.

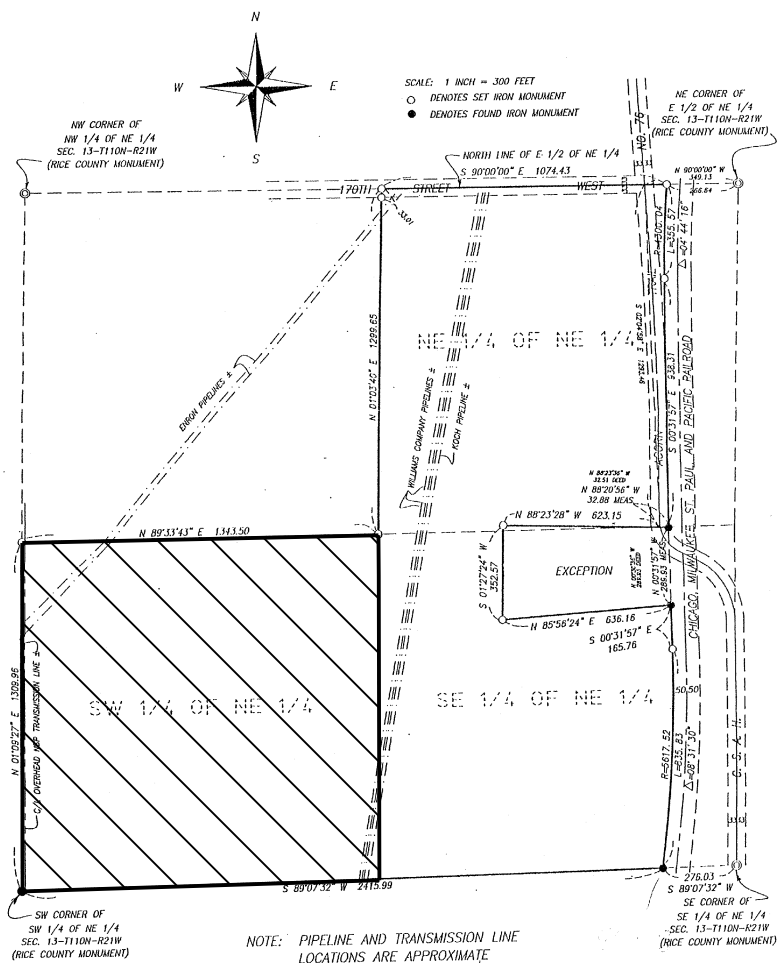
Certificate for:
Donald Schulz
16812 Acorn Trail
Faribault, MN 55021

RAPP LAND SURVEYING

David G. Rapp
Registered Land Surveyor

45967 Hwy. 56 Blvd. Canyon, MN 55046 507-789-5366
SURVEYOR'S CERTIFICATE

Bk: 12/70
D0160



PLEASE SEE ATTACHED SHEET
FOR LEGAL DESCRIPTION

I hereby certify that this survey, plan, or report was prepared by me or under my direct supervision and that I am a duly Registered Land Surveyor under the laws of the State of Minnesota.
Dated June 4, 2001

Reduction



David G. Rapp
David G. Rapp
Minnesota Registration No. 22044

Subject Property
Figure 3-1

According to the landowner some of the ground is tiled. One specific tile location was identified.

Soils

Figure 3-2 shows soil classifications for the subject property. Soil types found on the site are presented on Table 3-1. Hydric soils, including Cordova clay loam (Map Symbol 109), Glencoe clay loam (Map Symbol 114) and Hamel loam (Map Symbol 414), are located on the property and occupy the low areas and depressions.

Table 3-1 Soils on Subject Property

Map Symbol	Soil Name	Slope Percent	Comment	Hydric
104B	Hayden Loam	2-6	Well drained	No
104C2	Hayden Loam	6-12	Well drained	No
109	Cordova Clay Loam	0-2	Poorly drained	Yes
114	Glencoe Clay Loam	0-1	Very poorly drained	Yes
414	Hamel Loam	1-3	Poorly drained	Yes
1361	LeSueur Loam	1-3	Moderately well drained	No

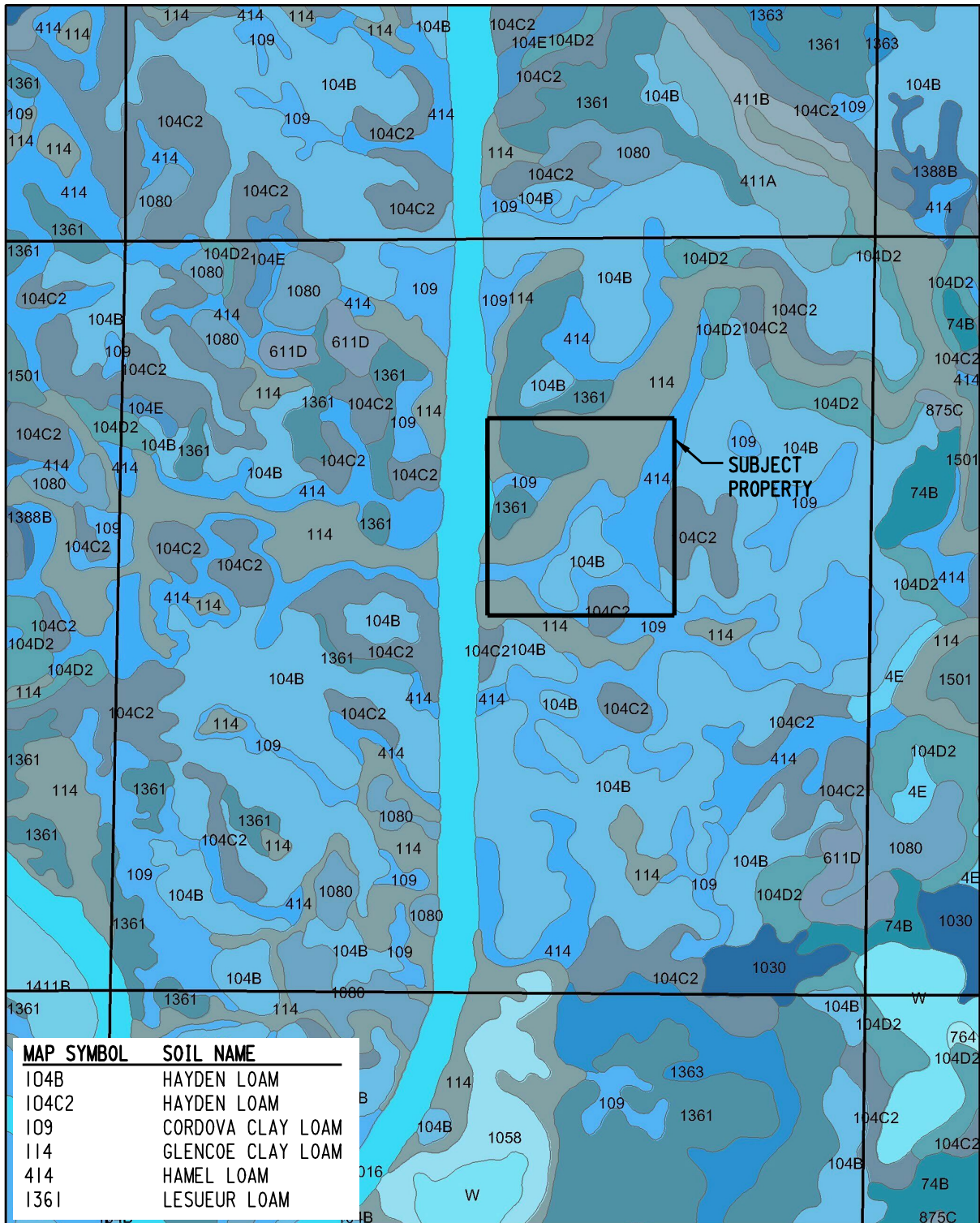
Source: Soil Survey of Rice County, Minnesota, U.S. Department of Agriculture, Natural Resources Conservation Service, 2000 and Rice County Update, Minnesota, Comprehensive Hydric Soils List, U.S. Department of Agriculture, Natural Resources Conservation Service, 2000

National Wetlands Inventory (NWI) Map

The National Wetlands Inventory (NWI) Map, prepared by the U.S. Fish and Wildlife Services (FWS) is presented on Figure 3-3 for the subject property. The NWI map does not recognize any identified wetlands.

The NWI map was developed on 1960 USGS topographic base mapping. The I-35 corridor, which establishes the western boundary of the site, does not appear on this map. A Palustrine emergent, seasonal partially drained/ditched (PEMCD) wetland is located in the vicinity of the I-35 corridor. The location of this wetland may be coincident with Wetland A that was delineated as part of this work and described later in this report.

Soil Survey Map Units T110N, R21N, Section 13 Rice County, Minnesota



0 500 1,000 2,000 Feet

**Soil Types
Figure 3-2**



Wetlands Delineation

Wetlands Delineation

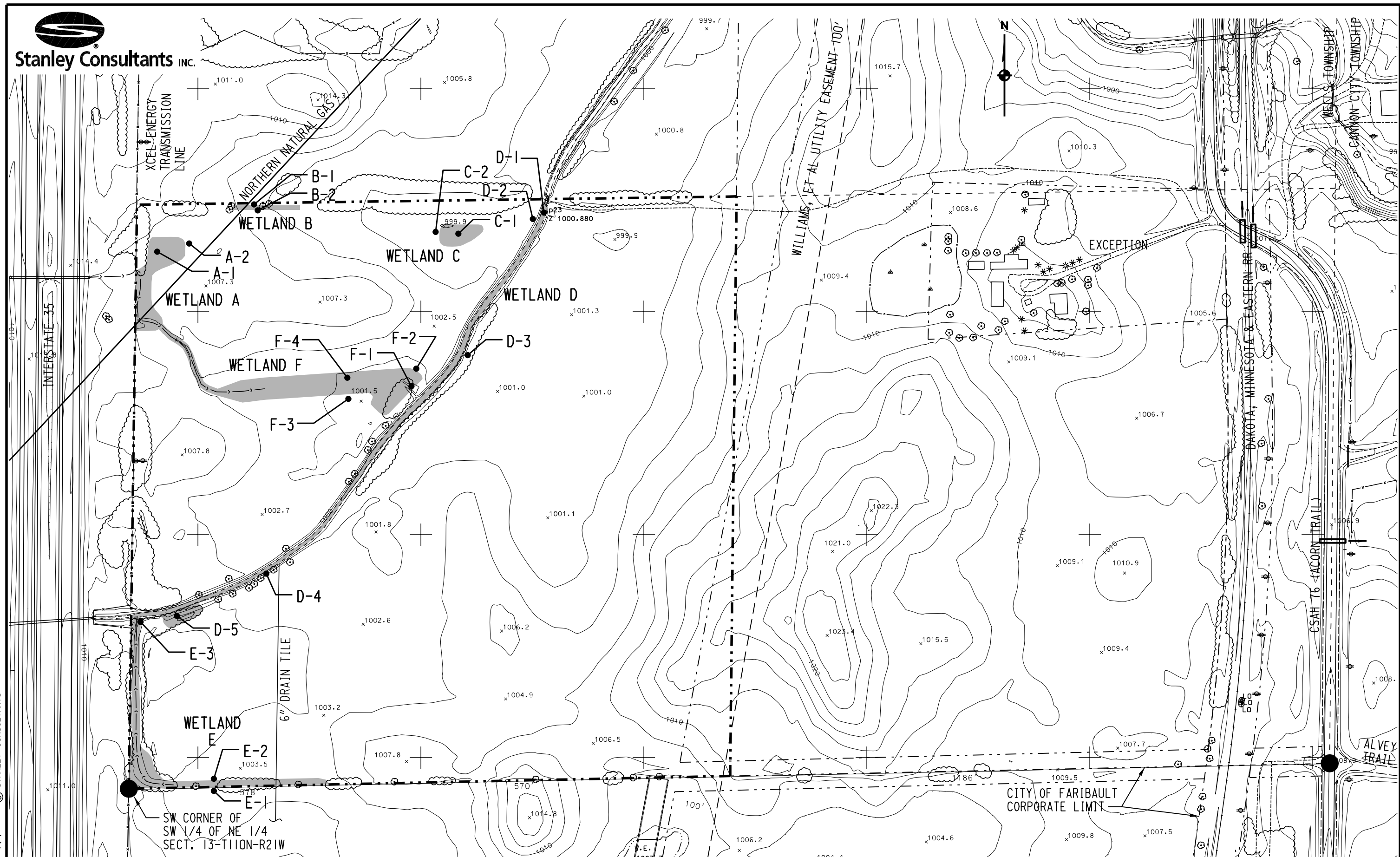
Several wetland areas were found within the subject property. Three areas are associated with small depressions in hydric soil. Three wetland areas are associated with the drainageways that are described in Section 3. Delineated wetland locations are shown on Figure 4-1. The field data sheets are provided in Exhibit A. Representative photographs of the wetland areas are presented in Exhibit B.

Wetland No. A

Wetland No. A (see Figure 4-1) is located in a depression in the northwest corner of the site. The western end of the depression is partially defined by the I-35 right-of-way fence line and vegetation. However, the southwestern portion of the basin extends south into a shallow swale and west into the I-35 right-of-way. The portion of the wetland within the project boundaries is approximately 5600 square feet (0.13 acres).

The wetland is located in a cultivated field planted in corn. No corn is present in the depression, but corn surrounds the depression on three sides. A 10-foot wide ring of cocklebur (*Xanthium strumarium*) with some smartweed (*Polygonum amphibium*) and pigweed (*Amaranthus* sp.) is located inside the corn with the plant species transitioning to a stand of immature unknown grass in the center of the depression.

The soil found in the depression matches the Glencoe clay loam mapping unit. The soil at Data Point A-1 exhibits low chroma color, which indicates the presence of hydric soils. Glencoe clay loam is also listed as a hydric soil in the Rice County hydric soil list. Soil on higher ground outside the perimeter of the depression changes to LeSueur loam mapping series. The soil at Data Point A-2 located where the corn begins is a dry sandy silt with cobbles in the upper four inches. The soil was too hard to penetrate deeper.



Delineated Wetland Locations Figure 4-1

q:\16245\dgn\Fig_4-1.dgn
CADD B2-R4 © STANLEY CONSULTANTS

Using the Classification of Wetlands and Deep Water Habitats of the United States, this farmed wetland comprises approximately 11,400 square feet (0.26 acres) and can be classified by the Cowardin system as a palustrine wetland with emergent vegetation subject to temporary inundation (PEMA). This corresponds to a Type 1 wetland based on the U.S. Fish and Wildlife Service (USFWS) Circular 39 classification system.

Wetland No. B

Wetland No. B (see Figure 4-1) is located in a depression area at the bottom of the north and south facing slopes that straddles the north property line. The depression is not currently cultivated and does not show evidence of cultivation, at least in recent years. Only a small portion of the wetland extends into the subject property; as most of it is located on the adjoining property to the north. The area of the wetland south of the property line within the subject property is approximately 1500 square feet (0.03 acres).

The vegetation in this wetland is more diverse and established than at any of the other wetland locations. Since it is not cultivated, several species can be found including Reed canary grass (*Phalaris arundinacea*), fall panicum (*Panicum dichotomiflorum*), slender rush (*Juncus tenuis*) and several other species scattered throughout the wetland. The vegetation changes abruptly along the southern edge of the wetland as a healthy stand of corn is present where cultivation begins. A narrow band of predominantly great ragweed (*Ambrosia trifida*) separates the diverse wetland vegetation from the corn.

Soil in the depression matches the Glencoe clay loam mapping series. This series is listed on the hydric soils list. Soils at Data Point B-1 exhibit low chroma colors further indicating hydric conditions. Soil at Data Point B-2 is dry sandy silt with cobbles as the soil transitions to mapping series LeSueur loam.

The wetland within the subject property can be classified as PEMA by the Cowardin system and Type 1 by the USFWS Circular 39 system.

Wetland No. C

Wetland No. C (see Figure 4-1) is a depression located in a cornfield along the northern edge of the subject property. It has similar characteristics as Wetland No. A. Vegetation in the depression is a monoculture of pigweed (*Amaranthus* sp.). Corn surrounds the depression. According to the landowner, this depression has not been tiled. According to the soils map Glencoe clay loam is found both in the depression and outside of the depression. Soil samples taken at Data Points C-1 and C-2 match the characteristics of the Glencoe mapping series. The wetland area is approximately 3900 square feet (0.09 acres). The area is a farmed wetland and can be classified as a PEMA by the Cowardin system and Type 1 by the USFWS Circular 39.

Wetland No. D

Wetland No. D (see Figure 4-1) comprises a deep drainageway that runs northeasterly across the site. The drainageway appears to have been channelized sometime in the past since it is straight with a uniform cross section. The bottom width is approximately 9 feet and the top width is approximately 24 to 26 feet. The channel ranges from 4 to 5 feet deep. A 20-foot

long, 5-foot diameter riveted steel culvert is located in the drainageway at the north property line providing a farm equipment access across the drainageway. There appears to be permanent to semi-permanent water in the drainageway since minnows and frogs were observed. At the time of the field survey water was flowing to the northeast.

Data Point D-1 shows wetland vegetation and hydrology. The soils appear to be depositional and exhibit an aquic moisture regime. Data Point D-2 taken at the top of the west bank shows that even though wetland vegetation and hydric soil are present, sufficient hydrology indicators are not present to call the area on the top of the bank a wetland. This is supported by similar observations from Data Point D-3 taken at the top of the east bank. Therefore, only the drainageway channel and sideslopes are considered wetland at these locations covering an area of approximately 14,800 square feet (0.34 acres).

At Data Point D4, taken at the top of the east bank, a dense stand of sandbar willow (*Salix exigua*) is located. The soils at this location are heavy silty clay (10YR3/1) from 0 to 8 inches and clay silt (10YR3/1) at a depth greater than 8 inches. This area tends to be slightly lower than the surrounding area so water may collect here longer than other areas along the bank. The area generally defined by the limit of the stand of sandbar willow exhibits wetland characteristics and is included as part of the area calculation for Wetland D. It can be classified as palustrine emergent seasonal and ditched (PEMCD) by the Cowardin system and Type 3 by the USFWS Circular 39 system.

Wetland No. E

Wetland No. E (see Figure 4-1) comprises a shallow manmade drainageway that runs west, then north, along the south and west property lines. Data Point E1 shows that heavy moist silty clay soil is present in the channel. In the upper 20 inches it is dark (10YR2/1) but changes rapidly to a gray (10YR5/1) with oxidized root channels. Hydrophytic vegetation is located in the drainageway as well. At Data Point 2 the soil has transitioned to a drier, but dark, clay silt (10YR2/1) to 16 inches. This data point is on slightly higher ground and vegetation has begun to transition to more upland type species. Water entering the drainageway comes from runoff from the soybean field on the adjoining property to the south with some additional runoff from the soybean field on the subject property. The extent of the wetland at this location is the drainageway with the boundary defined by a change in ground elevation on either side of the channel.

Wetland E continues along the south and west property lines and discharges into the main drainageway at the west property line. At its confluence with the main drainageway, the channel outlet is approximately 2 feet above the bottom of the main drainageway.

The wetland can be classified as PEMAd by the Cowardin system and Type 1 by the USFWS Circular 39 system. The total area of Wetland E is approximately 16,000 square feet (0.37 acres).

Wetland No. F

Wetland No. F (see Figure 4-1) comprises a shallow drainageway that drains Wetland No. A. Its upstream end is narrow (approximately 15 feet) but widens to approximately 50 feet in the

downstream reach. Prior to discharge into the main drainageway, a broad flat area collects water before it is slowly released. A rock letdown structure directs water from the wetland area to the main drainageway. The location of the drainageway wetland is within a cornfield. The drainageway may have been planted with corn, but no corn to very scattered and stunted corn exists. At Data Point F the healthy stand of corn on slightly higher ground transitions quickly to cocklebur (*Xanthium strumarium*), and pigweed (*Amaranthus* sp.) with River Bulrush (*Scirpus fluviatilis*) and Smartweed (*Polygonum amphibrum*) towards the lowest portion of the swale. The soil changes little when samples taken in the corn and the transition area are compared. Samples taken at Data Points F1 and F2 exhibit hydric characteristics with a dark silty clay (10YR2/1) overlaying a gray silty clay (10YR4/1). At Data Point Nos. F-3 and F-4 similar soil characteristics were found but a silty sand layer is present underlying the silty clays at about 20-22 inches in depth. The wetland boundary was located primarily based on change in vegetation and relief along the edge of the drainageway.

The wetland can be classified as PEMAd by the Cowardin system and Type 1 by the USFWS Circular 39 system. The total area for this drainageway wetland (Wetland F) is approximately 27,500 square feet (0.63 acres).

Section 5

Conclusion

Delineated Wetlands

Six wetland areas were identified and delineated on the site of the future power generating facility. Three of the wetlands are depressions and three are drainageways. The total area for the three depressional wetlands is approximately 0.25 acres. Approximately 1.34 acres is included in the drainageway wetlands.

Development activities affecting these wetlands will require approval from the U.S. Army Corps of Engineers, Natural Resources Conservation Service, Minnesota Department of Natural Resources and/or the Minnesota Board of Water and Soil Resources. In addition, other state and local regulatory agencies may need to approve the proposed development activities.

Wetland Regulation

In most cases altering a wetland typically by draining or filling will require a permit or some type of authorization. In Minnesota, a number of agencies could have jurisdiction over a wetland depending on the circumstances associated with the wetland and proposed project. Agency involvement can occur on a federal, state, or local level and could include the U.S. Army Corps of Engineers, U.S. Department of Agriculture Natural Resources Conservation Service, Minnesota Department of Natural Resources, Minnesota Pollution Control Agency, and the Rice Soil and Water Conservation District.

The Minnesota Wetland Conservation Act specifies ten categories of exempt drain or fill activities where no permit or approval is necessary. Among the exempt status certain agricultural activities are included that impact Type 1 and Type 2 wetlands. Activities in these wetlands include those that were planted with annually seeded crops or were in a crop rotation seeding of pasture grass or legumes in six of the last ten years prior to January 1, 1991.

The Rice Soil and Water Conservation District needs to be contacted for a formal determination on whether a wetland is eligible for regulation or exempt. This process is initiated by filling out a "Minnesota Local/State/Federal Application Form for Water/Wetland Projects." This form will be sent to all wetland regulatory agencies asking if they have jurisdiction over any wetlands in the project area.

Section 6

References

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2. U.S. Department of Agriculture - Soil Conservation Service, Rice County Update, Minnesota, Comprehensive Hydric List, 2000.
3. U.S. Department of Interior, Fish and Wildlife Service, National Wetlands Inventory, Faribault Quadrangle, Minnesota.
4. U.S. Department of the Interior, Fish and Wildlife Service, National List of Plant Species That Occur in Wetlands: North Central (Region 3) Biological Report 88 (26.3), May 1988.
5. Cowardin, L., V. Carter, F. Golet and E. LaRoe, 1979, Classification of Wetlands and Deepwater Habitats of the United States, U.S. Department of Interior, Fish and Wildlife Service.
6. U.S. Department of Agriculture – Natural Resources Conservation Service, Soil Survey of Rice County, Minnesota, 2000.
7. U.S. Department of Interior, Fish and Wildlife Service, Circular 39, 1956.
8. Eggers, Steve D. and Reed, Donald M.; Wetland Plants and Plant Communities of Minnesota & Wisconsin, Second Edition, U.S. Army Corps of Engineers, St. Paul District, 1997.
9. USDA – Soil Conservation Service, Midwestern Wetland Flora – Field Office Guide to Plant Species, Midwest National Technical Center; Lincoln, Nebraska.

10. Peterson, Roger Tory and McKenny, Margaret; A Field Guide to Wildflowers of Northeastern and North Central North America; Houghton Mifflin Company; Boston, 1986.
11. Weeds of the North Central States, North Central Cooperative Extension Service, Agricultural Experiment Station, The University of Illinois.
12. Munsell Soil Color Charts, Gretag McBeth, New Windsor, New York, 2000.

Respectfully submitted,
Stanley Consultants, Inc.

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Reviewed by _____
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Approved by _____
Martin J. Weber, P.E.
Project Manager

I hereby certify that this plan, specification, or report was prepared by me or under my direct personal supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Signature: _____ Typed or Printed Name: Martin J. Weber, P.E.

Date: October 15, 2002 Reg. No.: 20419

ERS:dll:16245rpt

Appendix A

Data Forms

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>MMPA Power Generation Project – Faribault, MN</u> Applicant/Owner: <u>Minnesota Municipal Power Agency</u> Investigator: <u>ER Slattery</u>	Date: <u>9/26/02</u> County: <u>Rice</u> State: <u>Minnesota</u>
Do Normal Circumstances exist on the site? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Is the site significantly disturbed (Atypical Situation)? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Is the area a potential Problem Area? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: <u>D-3</u>

VEGETATION

Dominant Plant Species	% Cover	Stratum	Indicator	Dominant Plant Species	% Cover	Stratum	Indicator
1. Soy Beans		H	---	9. Ribes missouriense		S	?
2. Salix exigua		S	OBL	10. Anemone quinquefolia		H	FAC*
3. Phalaris arundinacea		H	FACW+	11. _____			
4. Rubis strigosus		S	FACW-	12. _____			
5. Ambrosia trifida		H	FAC+	13. _____			
6. Parthenocissus quinquefolia		WV	FAC-	14. _____			
7. Acer negundo		T	FACW-	15. _____			
8. Vitis riparia		WV	FACW-	16. _____			
Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-).							
Remarks: The species presented above cover an area on the drainageway bank on both sides of the data point from the edge of the cultivated field to the edge of the bank. Species are presented generally in order of occurrence from the soybean field to the drainageway.							

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available Field Observations: Depth of Surface Water: _____ (in.) Depth to Free Water in Pit: _____ (in.) Depth to Saturated Soil: _____ (in.)	Wetland Hydrology Indicators: Primary Indicators <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 inches ⁽¹⁾ <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Remarks: No hydrology indicators present.	
⁽¹⁾ Roots but no oxidized channels.	

SOILS

[illegible]

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is this Sampling Point Within a Wetland?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			
Hydric Soils Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			
<u>Type:</u> <ul style="list-style-type: none"> Cowardin: _____ USFWS Circular 39: _____ 					
Remarks:					

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>MMPA Power Generation Project – Faribault, MN</u> Applicant/Owner: <u>Minnesota Municipal Power Agency</u> Investigator: <u>ER Slattery</u>	Date: <u>9/26/02</u> County: <u>Rice</u> State: <u>Minnesota</u>
Do Normal Circumstances exist on the site? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Is the site significantly disturbed (Atypical Situation)? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Is the area a potential Problem Area? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: <u>D-4</u>

VEGETATION

Dominant Plant Species	% Cover	Stratum	Indicator	Dominant Plant Species	% Cover	Stratum	Indicator
1. <u>Salix exigua</u>	<u>90±</u>	<u>T</u>	<u>OBL</u>	9. <u>Viburnum lentago</u>	<u><5</u>	<u>S</u>	<u>FAC+</u>
2. <u>Populus deltoids</u>	<u><5</u>	<u>T</u>	<u>FAC+</u>	10. _____	_____	_____	_____
3. <u>Vitis riparia</u>	<u><5</u>	<u>WV</u>	<u>FACW-</u>	11. _____	_____	_____	_____
4. <u>Urtica dioica</u>	<u><5</u>	<u>H</u>	<u>FAC+</u>	12. _____	_____	_____	_____
5. <u>Sambucus Canadensis</u>	<u><5</u>	<u>S</u>	<u>FACW-</u>	13. _____	_____	_____	_____
6. <u>Parthenocissus vitacea</u>	<u><5</u>	<u>H</u>	<u>FAC-</u>	14. _____	_____	_____	_____
7. <u>Rhamnus cathartica</u>	<u><5</u>	<u>S</u>	<u>FACU*</u>	15. _____	_____	_____	_____
8. <u>Fraxinum pennsylvanica</u>	<u><5</u>	<u>T</u>	<u>FACW</u>	16. _____	_____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-).

Remarks: * "Wetland Plants and Plant Communities of Minnesota & Wisconsin"; Egger, S.D. & Reed, D.M. 1997 lists Rhamnus cathartica as FAC-.

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available Field Observations: Depth of Surface Water: _____ (in.) Depth to Free Water in Pit: _____ (in.) Depth to Saturated Soil: _____ (in.)	Wetland Hydrology Indicators: Primary Indicators <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input checked="" type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 inches ⁽¹⁾ <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input checked="" type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Remarks: Area where sandbar willow (<i>Salix exigua</i>) occurs is slightly lower than adjoining field and other areas of bank allowing water to collect here more than elsewhere along bank.	

SOILS

[illegible]

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	Is this Sampling Point Within a Wetland?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
Wetland Hydrology Present?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>					
Hydric Soils Present?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>					
<u>Type:</u> <ul style="list-style-type: none"> Cowardin: <u>PEMCd</u> USFWS Circular 39: <u>Type 3</u> 									
Remarks: This wetland part of the drainageway system.									

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>MMPA Power Generation Project – Faribault, MN</u> Applicant/Owner: <u>Minnesota Municipal Power Agency</u> Investigator: <u>ER Slattery</u>	Date: <u>9/13/02, 9/26/02</u> County: <u>Rice</u> State: <u>Minnesota</u>
Do Normal Circumstances exist on the site? Yes <input type="checkbox"/> No <input type="checkbox"/> Is the site significantly disturbed (Atypical Situation)? Yes <input type="checkbox"/> No <input type="checkbox"/> Is the area a potential Problem Area? Yes <input type="checkbox"/> No <input type="checkbox"/> (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: <u>E-1</u>

VEGETATION

Dominant Plant Species	% Cover	Stratum	Indicator		Dominant Plant Species	% Cover	Stratum	Indicator
1. <u>Phalaris arundinacea</u>	<u>95+</u>	<u>H</u>	<u>FACW+</u>		9. _____			
2. <u>Vitis riparia</u>	<u><5</u>	<u>WV</u>	<u>FACW-</u>		10. _____			
3. <u>Acer negundo</u>	<u><5</u>	<u>T</u>	<u>FACW-</u>		11. _____			
4. <u>Scirpus fluviatilis</u>	<u><5</u>	<u>H</u>	<u>OBL</u>		12. _____			
5. _____					13. _____			
6. _____					14. _____			
7. _____					15. _____			
8. _____					16. _____			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): _____

Remarks: _____

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available Field Observations: Depth of Surface Water: _____ (in.) Depth to Free Water in Pit: _____ (in.) Depth to Saturated Soil: _____ (in.)	Wetland Hydrology Indicators: Primary Indicators <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input checked="" type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input checked="" type="checkbox"/> Oxidized Root Channels in Upper 12 inches ⁽¹⁾ <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input checked="" type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Remarks: ⁽¹⁾ Below 20".	

SOILS

Map Unit Name (Series and Phase):		Glencoe clay loam (Map Series 114)		Drainage Class:		Very poorly drained	
Taxonomy (Subgroup):		Cumulic Endoaquolls		Field Observations Confirm Mapped Type?		Yes	<input checked="" type="checkbox"/>
						No	<input type="checkbox"/>

Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contract	Texture, Concretions, Structure, etc.
0-20		10YR2/1			Moist silty clay
20+		10YR5/1	7.5 YR 4/6		Silty clay

Hydric Soil Indicators:	
<input type="checkbox"/> Histosol <input type="checkbox"/> Histic Epipedon <input type="checkbox"/> Sulfidic Odor <input type="checkbox"/> Aquic Moisture Regime <input type="checkbox"/> Reducing Conditions <input checked="" type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Concretions <input type="checkbox"/> High Organic content in Surface Layer in Sandy Soils <input type="checkbox"/> Organic Streaking in Sandy Soils <input type="checkbox"/> Listed on Local Hydric Soils List <input type="checkbox"/> Listed on National Hydric Soils List <input type="checkbox"/> Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	Is this Sampling Point Within a Wetland?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
Wetland Hydrology Present?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>					
Hydric Soils Present?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>					

Type:	
<ul style="list-style-type: none"> Cowardin: <u>PEMAd</u> USFWS Circular 39: <u>Type 1</u> 	

Remarks: The depression can be considered a farmed wetland.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>MMPA Power Generation Project – Faribault, MN</u> Applicant/Owner: <u>Minnesota Municipal Power Agency</u> Investigator: <u>ER Slattery</u>	Date: <u>9/13/02, 9/26/02</u> County: <u>Rice</u> State: <u>Minnesota</u>
Do Normal Circumstances exist on the site? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Is the site significantly disturbed (Atypical Situation)? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Is the area a potential Problem Area? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: <u>E-2</u>

VEGETATION

Dominant Plant Species	% Cover	Stratum	Indicator	Dominant Plant Species	% Cover	Stratum	Indicator
1. <u>Cirsium arvense</u>	<u>5</u>	<u>H</u>		9. _____			
2. <u>Urtica dioica</u>	<u>5</u>	<u>H</u>		10. _____			
3. <u>Rose multiflora</u>	<u><5</u>	<u>S</u>	<u>FACU</u>	11. _____			
4. <u>Phalaris arundinacea</u>	<u>25</u>	<u>H</u>	<u>FACW+</u>	12. _____			
5. <u>Vitis riparia</u>	<u><5</u>	<u>WV</u>	<u>FACW-</u>	13. _____			
6. <u>Solidago gigantea</u>	<u>10</u>	<u>H</u>	<u>FACW</u>	14. _____			
7. _____				15. _____			
8. _____				16. _____			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): _____

Remarks: _____

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available Field Observations: Depth of Surface Water: _____ (in.) Depth to Free Water in Pit: _____ (in.) Depth to Saturated Soil: _____ (in.)	Wetland Hydrology Indicators: Primary Indicators <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input checked="" type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Remarks: <u>Data point located on higher ground than drainageway and Data Point No. E-2 and soil is much drier.</u>	

SOILS

Map Unit Name (Series and Phase):		Glencoe clay loam (Map Series 114)		Drainage Class:		Very poorly drained	
Taxonomy (Subgroup):		Cumulic Endoaquolls		Field Observations Confirm Mapped Type?		Yes	<input checked="" type="checkbox"/>
						No	<input type="checkbox"/>

Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contract	Texture, Concretions, Structure, etc.
0-16		10YR2/1			Clay silt

Hydric Soil Indicators:	
<input type="checkbox"/> Histosol <input type="checkbox"/> Histic Epipedon <input type="checkbox"/> Sulfidic Odor <input type="checkbox"/> Aquic Moisture Regime <input type="checkbox"/> Reducing Conditions <input checked="" type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Concretions <input type="checkbox"/> High Organic content in Surface Layer in Sandy Soils <input type="checkbox"/> Organic Streaking in Sandy Soils <input type="checkbox"/> Listed on Local Hydric Soils List <input type="checkbox"/> Listed on National Hydric Soils List <input type="checkbox"/> Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	Is this Sampling Point Within a Wetland?	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>					
Hydric Soils Present?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>					

Type:	
<ul style="list-style-type: none"> Cowardin: _____ USFWS Circular 39: _____ 	
Remarks:	

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>MMPA Power Generation Project – Faribault, MN</u> Applicant/Owner: <u>Minnesota Municipal Power Agency</u> Investigator: <u>ER Slattery</u>	Date: <u>9/16/02, 9/23602</u> County: <u>Rice</u> State: <u>Minnesota</u>
Do Normal Circumstances exist on the site? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Is the site significantly disturbed (Atypical Situation)? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Is the area a potential Problem Area? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: <u>F-1</u>

VEGETATION

Dominant Plant Species	% Cover	Stratum	Indicator	Dominant Plant Species	% Cover	Stratum	Indicator
1. Corn (stunted)	5	H	---	9.			
2. Xanthium strumarium	25	H	FAC	10.			
3. Pigweed (Amaranthus sp.)	60	H	---	11.			
4.				12.			
5. Salix exigua*		T	OBL	13.			
6. Scirpus fluviatilis*		H	OBL	14.			
7. Polygonum amphibium*		H	OBL	15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): _____

Remarks: *These species are located in the center of the drainageway away from Data Point No. F-1.

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available Field Observations: Depth of Surface Water: _____ (in.) Depth to Free Water in Pit: _____ (in.) Depth to Saturated Soil: _____ (in.)	Wetland Hydrology Indicators: Primary Indicators <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input checked="" type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input checked="" type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Remarks:	

SOILS

Map Unit Name (Series and Phase):		Cordova clay loam (Map Series 114)		Drainage Class:	Very poorly drained
Taxonomy (Subgroup):		Cumulic Endoaquolls		Field Observations Confirm Mapped Type?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contract	Texture, Concretions, Structure, etc.
0-20		10YR2/1			Silty clay
20+		10YR4/1			Silty clay trace sand

Hydric Soil Indicators:

<input type="checkbox"/> Histosol <input type="checkbox"/> Histic Epipedon <input type="checkbox"/> Sulfidic Odor <input type="checkbox"/> Aquic Moisture Regime <input type="checkbox"/> Reducing Conditions <input checked="" type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Concretions <input type="checkbox"/> High Organic content in Surface Layer in Sandy Soils <input type="checkbox"/> Organic Streaking in Sandy Soils <input type="checkbox"/> Listed on Local Hydric Soils List <input type="checkbox"/> Listed on National Hydric Soils List <input type="checkbox"/> Other (Explain in Remarks)
--	--

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is this Sampling Point Within a Wetland?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Hydric Soils Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		

Type:

- Cowardin: PEMAd
- USFWS Circular 39: Type 1

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>MMPA Power Generation Project – Faribault, MN</u> Applicant/Owner: <u>Minnesota Municipal Power Agency</u> Investigator: <u>ER Slattery</u>	Date: <u>9/13/02, 9/26/02</u> County: <u>Rice</u> State: <u>Minnesota</u>
Do Normal Circumstances exist on the site? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Is the site significantly disturbed (Atypical Situation)? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Is the area a potential Problem Area? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: <u>F-2</u>

VEGETATION

Dominant Plant Species	% Cover	Stratum	Indicator	Dominant Plant Species	% Cover	Stratum	Indicator
1. Corn	100	H	Upland?	9.			
2.				10.			
3.				11.			
4.				12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): _____

Remarks: Data point is in healthy stand of corn which transitions quickly to hydrophytic species towards the lower ground.

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available Field Observations: Depth of Surface Water: _____ (in.) Depth to Free Water in Pit: _____ (in.) Depth to Saturated Soil: _____ (in.)	Wetland Hydrology Indicators: Primary Indicators <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Remarks: No hydrology indicators present.	

SOILS

Map Unit Name (Series and Phase):		Hayden loam (Map Series 114)		Drainage Class:	Well drained
Taxonomy (Subgroup):		Typic hapludalfs		Field Observations Confirm Mapped Type?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contract	Texture, Concretions, Structure, etc.
0-22		10YR2/1			Silty clay trace sand
22+		10YR4/1			Silty clay trace sand

Hydric Soil Indicators:

<input type="checkbox"/> Histosol <input type="checkbox"/> Histic Epipedon <input type="checkbox"/> Sulfi dic Odor <input type="checkbox"/> Aquic Moisture Regime <input type="checkbox"/> Reducing Conditions <input checked="" type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Concretions <input type="checkbox"/> High Organic content in Surface Layer in Sandy Soils <input type="checkbox"/> Organic Streaking in Sandy Soils <input type="checkbox"/> Listed on Local Hydric Soils List <input type="checkbox"/> Listed on National Hydric Soils List <input type="checkbox"/> Other (Explain in Remarks)
---	--

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is this Sampling Point Within a Wetland?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Hydric Soils Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		

Type:

- Cowardin: _____
- USFWS Circular 39: _____

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>MMPA Power Generation Project – Faribault, MN</u> Applicant/Owner: <u>Minnesota Municipal Power Agency</u> Investigator: <u>ER Slattery</u>	Date: <u>9/13/02, 9/26/02</u> County: <u>Rice</u> State: <u>Minnesota</u>
Do Normal Circumstances exist on the site? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Is the site significantly disturbed (Atypical Situation)? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Is the area a potential Problem Area? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: <u>F-3</u>

VEGETATION

Dominant Plant Species	% Cover	Stratum	Indicator	Dominant Plant Species	% Cover	Stratum	Indicator
1. Corn (slightly stunted)	75	H	---	9.			
2. Xanthium strumarium	25	H	FAC	10.			
3.				11.			
4.				12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC): _____

Remarks: _____

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available Field Observations: Depth of Surface Water: _____ (in.) Depth to Free Water in Pit: _____ (in.) Depth to Saturated Soil: _____ (in.)	Wetland Hydrology Indicators: Primary Indicators <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Remarks: Data point is located on slightly higher ground than drainageway.	

SOILS

Map Unit Name (Series and Phase):		Glencoe clay loam (Map Series 114)		Drainage Class:		Very poorly drained	
Taxonomy (Subgroup):		Cumulic Endoaquolls		Field Observations Confirm Mapped Type?		Yes	<input checked="" type="checkbox"/>
						No	<input type="checkbox"/>

Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contract	Texture, Concretions, Structure, etc.
0-19		10YR2/1			Silty clay
18-20+		10YR6/2			Silty sand

Hydric Soil Indicators:	
<input type="checkbox"/> Histosol <input type="checkbox"/> Histic Epipedon <input type="checkbox"/> Sulfidic Odor <input type="checkbox"/> Aquic Moisture Regime <input type="checkbox"/> Reducing Conditions <input checked="" type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Concretions <input type="checkbox"/> High Organic content in Surface Layer in Sandy Soils <input type="checkbox"/> Organic Streaking in Sandy Soils <input type="checkbox"/> Listed on Local Hydric Soils List <input type="checkbox"/> Listed on National Hydric Soils List <input type="checkbox"/> Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? *	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	Is this Sampling Point Within a Wetland?	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>					
Hydric Soils Present?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>					

Type:

- Cowardin: _____
- USFWS Circular 39: _____

Remarks: *Corn.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>MMPA Power Generation Project – Faribault, MN</u> Applicant/Owner: <u>Minnesota Municipal Power Agency</u> Investigator: <u>ER Slattery</u>	Date: <u>9/13/02, 9/26/02</u> County: <u>Rice</u> State: <u>Minnesota</u>
Do Normal Circumstances exist on the site? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Is the site significantly disturbed (Atypical Situation)? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Is the area a potential Problem Area? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: <u>F-4</u>

VEGETATION

Dominant Plant Species	% Cover	Stratum	Indicator	Dominant Plant Species	% Cover	Stratum	Indicator
1. <u>Xanthium strumarium</u>	<u>50</u>	<u>H</u>	<u>FAC</u>	9. _____			
2. <u>Scirpus fluviatilis</u>	<u><5</u>	<u>H</u>	<u>OBL</u>	10. _____			
3. <u>Ambrosia artemisiifolia</u>	<u>20</u>	<u>H</u>		11. _____			
4. <u>Ambrosia trifida</u>	<u><5</u>	<u>H</u>	<u>FAC+</u>	12. _____			
5. <u>Populics deltoids</u>	<u>5</u>	<u>H</u>	<u>FAC+</u>	13. _____			
6. <u>Corn (stunted)</u>	<u><5</u>	<u>H</u>	<u>---</u>	14. _____			
7. _____				15. _____			
8. _____				16. _____			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): _____

Remarks: _____

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available Field Observations: Depth of Surface Water: _____ (in.) Depth to Free Water in Pit: _____ (in.) Depth to Saturated Soil: _____ (in.)	Wetland Hydrology Indicators: Primary Indicators <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input checked="" type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Remarks: _____	

SOILS

Map Unit Name (Series and Phase):		Glencoe clay loam (Map Series 114)		Drainage Class:		Very poorly drained	
Taxonomy (Subgroup):		Cumulic Endoaquolls		Field Observations Confirm Mapped Type?		Yes	<input checked="" type="checkbox"/> No <input type="checkbox"/>

Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contract	Texture, Concretions, Structure, etc.
0-9		10YR2/1			Silty clay
9-10		10YR4/1			Sandy silty clay
10-18+		10YR6/2			Silty sand

Hydric Soil Indicators:	
<input type="checkbox"/> Histosol <input type="checkbox"/> Histic Epipedon <input type="checkbox"/> Sulfidic Odor <input type="checkbox"/> Aquic Moisture Regime <input type="checkbox"/> Reducing Conditions <input checked="" type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Concretions <input type="checkbox"/> High Organic content in Surface Layer in Sandy Soils <input type="checkbox"/> Organic Streaking in Sandy Soils <input type="checkbox"/> Listed on Local Hydric Soils List <input type="checkbox"/> Listed on National Hydric Soils List <input type="checkbox"/> Other (Explain in Remarks)
Remarks:	

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	Is this Sampling Point Within a Wetland?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
Wetland Hydrology Present?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>					
Hydric Soils Present?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>					

Type:	
<ul style="list-style-type: none"> Cowardin: <u>PEMAd</u> USFWS Circular 39: <u>Type 1</u> 	
Remarks:	

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>MMPA Power Generation Project – Faribault, MN</u> Applicant/Owner: <u>Minnesota Municipal Power Agency</u> Investigator: <u>ER Slattery</u>	Date: <u>7/16/02, 7/23/02</u> County: <u>Rice</u> State: <u>Minnesota</u>
Do Normal Circumstances exist on the site? Yes <input type="checkbox"/> No <input type="checkbox"/> Is the site significantly disturbed (Atypical Situation)? Yes <input type="checkbox"/> No <input type="checkbox"/> Is the area a potential Problem Area? Yes <input type="checkbox"/> No <input type="checkbox"/> (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: _____

VEGETATION

Dominant Plant Species	% Cover	Stratum	Indicator	Dominant Plant Species	% Cover	Stratum	Indicator
1. _____				9. _____			
2. _____				10. _____			
3. _____				11. _____			
4. _____				12. _____			
5. _____				13. _____			
6. _____				14. _____			
7. _____				15. _____			
8. _____				16. _____			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC): _____

Remarks: _____

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available Field Observations: Depth of Surface Water: _____ (in.) Depth to Free Water in Pit: _____ (in.) Depth to Saturated Soil: _____ (in.)	Wetland Hydrology Indicators: Primary Indicators <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Remarks: _____	

SOILS

Map Unit Name (Series and Phase): _____		Drainage Class: _____	
Taxonomy (Subgroup): _____		Field Observations Confirm Mapped Type? Yes <input type="checkbox"/> No <input type="checkbox"/>	

Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contract	Texture, Concretions, Structure, etc.

Hydric Soil Indicators:	
<input type="checkbox"/> Histosol <input type="checkbox"/> Histic Epipedon <input type="checkbox"/> Sulfidic Odor <input type="checkbox"/> Aquic Moisture Regime <input type="checkbox"/> Reducing Conditions <input type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Concretions <input type="checkbox"/> High Organic content in Surface Layer in Sandy Soils <input type="checkbox"/> Organic Streaking in Sandy Soils <input type="checkbox"/> Listed on Local Hydric Soils List <input type="checkbox"/> Listed on National Hydric Soils List <input type="checkbox"/> Other (Explain in Remarks)
Remarks:	

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
Hydric Soils Present?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Is this Sampling Point Within a Wetland? Yes <input type="checkbox"/> No <input type="checkbox"/>

<u>Type:</u> <ul style="list-style-type: none"> Cowardin: _____ USFWS Circular 39: _____
Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>MMPA Power Generation Project – Faribault, MN</u> Applicant/Owner: <u>Minnesota Municipal Power Agency</u> Investigator: <u>ER Slattery</u>	Date: <u>7/16/02, 7/23/02</u> County: <u>Rice</u> State: <u>Minnesota</u>
Do Normal Circumstances exist on the site? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Is the site significantly disturbed (Atypical Situation)? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Is the area a potential Problem Area? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: <u>A-1</u>

VEGETATION

Dominant Plant Species	% Cover	Stratum	Indicator	Dominant Plant Species	% Cover	Stratum	Indicator
1. Pigweed (Amaranthus sp.)		H	---	9.			
2. Xanthium strumarium		H	FAC	10.			
3. Unknown grass		H	---	11.			
4. Phalaris arundinacea		H	FACW+	12.			
5. Polygonum amphibium		H	OBL	13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): _____

Remarks: Depression was planted with corn but no corn present. Corn present around perimeter of depression on south, east and north. Stunted weeds and unknown immature grass are present in depression. A ring of cocklebur (Xanthium strumarium) approximately 10 feet wide is present inside corn with some scattered pigweed (Amaranthus sp.) and smartweed (Polygonum amphibium) present. Depression extends across I-35 fence line. Vegetation in fence line dominated by Reed canary grass (Phalaris arundinacea).

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available Field Observations: Depth of Surface Water: _____ (in.) Depth to Free Water in Pit: _____ (in.) Depth to Saturated Soil: _____ (in.)	Wetland Hydrology Indicators: Primary Indicators <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 inches <input type="checkbox"/> Water-Stained Leaves <input checked="" type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input checked="" type="checkbox"/> Other (Explain in Remarks)
Remarks: Stunted plant growth in depression and no corn present. Landowner did not indicate the presence of field tile.	

SOILS

Map Unit Name (Series and Phase):		Glencoe clay loam (Map Series 114)		Drainage Class:		Very poorly drained			
Taxonomy (Subgroup):		Cumulic Endoaquolls		Field Observations Confirm Mapped Type?		Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>

Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contract	Texture, Concretions, Structure, etc.
0-18		10YR2/1			Loam
18-33		10YR2/1			Loam trace sand

Hydric Soil Indicators:	
<input type="checkbox"/> Histosol <input type="checkbox"/> Histic Epipedon <input type="checkbox"/> Sulfidic Odor <input type="checkbox"/> Aquic Moisture Regime <input type="checkbox"/> Reducing Conditions <input checked="" type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Concretions <input type="checkbox"/> High Organic content in Surface Layer in Sandy Soils <input type="checkbox"/> Organic Streaking in Sandy Soils <input checked="" type="checkbox"/> Listed on Local Hydric Soils List <input type="checkbox"/> Listed on National Hydric Soils List <input type="checkbox"/> Other (Explain in Remarks)
Remarks:	

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>	Is this Sampling Point Within a Wetland?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
Wetland Hydrology Present?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>					
Hydric Soils Present?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>					

Type:	
• Cowardin:	PEMA
• USFWS Circular 39:	Type 1
Remarks: The depression can be considered a farmed wetland.	

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>MMPA Power Generation Project – Faribault, MN</u> Applicant/Owner: <u>Minnesota Municipal Power Agency</u> Investigator: <u>ER Slattery</u>	Date: <u>7/16/02, 7/23/02</u> County: <u>Rice</u> State: <u>Minnesota</u>
Do Normal Circumstances exist on the site? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Is the site significantly disturbed (Atypical Situation)? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Is the area a potential Problem Area? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: <u>A-2</u>

VEGETATION

Dominant Plant Species	% Cover	Stratum	Indicator	Dominant Plant Species	% Cover	Stratum	Indicator
1. Corn (Zea mays)	100	H	Upland?	9.			
2.				10.			
3.				11.			
4.				12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC): _____

Remarks: Corn shows no sign of stress.

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available Field Observations: Depth of Surface Water: _____ (in.) Depth to Free Water in Pit: _____ (in.) Depth to Saturated Soil: _____ (in.)	Wetland Hydrology Indicators: Primary Indicators <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Remarks: Very dry soil on slightly higher ground than Data Point A-1. No hydrology indicators present.	

SOILS

Map Unit Name (Series and Phase):		LeSueur loam (Map Series 1361)		Drainage Class:		Moderately well drained	
Taxonomy (Subgroup):		Aquic Arqiudolls		Field Observations Confirm Mapped Type?		Yes	<input checked="" type="checkbox"/>
						No	<input type="checkbox"/>

Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contract	Texture, Concretions, Structure, etc.
0-4		10YR3/2			Sandy silt w/cobbles

Hydric Soil Indicators:

<input type="checkbox"/> Histosol <input type="checkbox"/> Histic Epipedon <input type="checkbox"/> Sulfidic Odor <input type="checkbox"/> Aquic Moisture Regime <input type="checkbox"/> Reducing Conditions <input type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Concretions <input type="checkbox"/> High Organic content in Surface Layer in Sandy Soils <input type="checkbox"/> Organic Streaking in Sandy Soils <input type="checkbox"/> Listed on Local Hydric Soils List <input type="checkbox"/> Listed on National Hydric Soils List <input type="checkbox"/> Other (Explain in Remarks)
---	--

Remarks: Soil is very dry. Could not penetrate probe any deeper.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	Is this Sampling Point Within a Wetland?	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>					
Hydric Soils Present?	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>					

Type:

- Cowardin: _____
- USFWS Circular 39: _____

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>MMPA Power Generation Project – Faribault, MN</u> Applicant/Owner: <u>Minnesota Municipal Power Agency</u> Investigator: <u>ER Slattery</u>	Date: <u>7/16/02, 7/23/02</u> County: <u>Rice</u> State: <u>Minnesota</u>
Do Normal Circumstances exist on the site? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Is the site significantly disturbed (Atypical Situation)? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Is the area a potential Problem Area? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: <u>B-1</u>

VEGETATION

Dominant Plant Species	% Cover	Stratum	Indicator	Dominant Plant Species	% Cover	Stratum	Indicator
1. <u>Carex molesta</u>	<u><5</u>	<u>H</u>	<u>NL ⁽¹⁾</u>	9. _____			
2. <u>Phalaris arundinacea</u>	<u>10</u>	<u>H</u>	<u>FACW+</u>	10. _____			
3. <u>Agrostis gigantea</u>	<u>5</u>	<u>H</u>	<u>FACW</u>	11. _____			
4. <u>Juncus tenuis</u>	<u>40</u>	<u>H</u>	<u>FAC</u>	12. _____			
5. <u>Panicum dichotomiflorum</u>	<u>10</u>	<u>H</u>	<u>FACW-</u>	13. _____			
6. _____				14. _____			
7. _____				15. _____			
8. _____				16. _____			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): _____

Remarks: (1) Not Listed in National List of Plant Species That Occur in Wetlands; North Central (Region 3) U.S. Department of the Interior Biological Report 88(26.3) May 1988.

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available Field Observations: Depth of Surface Water: _____ (in.) Depth to Free Water in Pit: _____ (in.) Depth to Saturated Soil: _____ (in.)	Wetland Hydrology Indicators: Primary Indicators <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 inches <input type="checkbox"/> Water-Stained Leaves <input checked="" type="checkbox"/> Local Soil Survey Data <input checked="" type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Remarks: Area located at bottom of two rises – one to north and one to south. Runoff from these two hills tends to collect in area.	

SOILS

Map Unit Name (Series and Phase):		Glencoe clay loam (Map Series 114)		Drainage Class:	Very poorly drained	
Taxonomy (Subgroup):		Cumulic Endoaquolls		Field Observations Confirm Mapped Type?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Profile Description:						
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contract	Texture, Concretions, Structure, etc.	
0-18		10YR2/1			Loam w/organic	
18-33		10YR2/1			Loam	
Hydric Soil Indicators:						
<input type="checkbox"/> Histosol		<input type="checkbox"/> Concretions				
<input type="checkbox"/> Histic Epipedon		<input type="checkbox"/> High Organic content in Surface Layer in Sandy Soils				
<input type="checkbox"/> Sulfidic Odor		<input type="checkbox"/> Organic Streaking in Sandy Soils				
<input type="checkbox"/> Aquic Moisture Regime		<input checked="" type="checkbox"/> Listed on Local Hydric Soils List				
<input type="checkbox"/> Reducing Conditions		<input type="checkbox"/> Listed on National Hydric Soils List				
<input checked="" type="checkbox"/> Gleyed or Low-Chroma Colors		<input type="checkbox"/> Other (Explain in Remarks)				
Remarks:						

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Hydric Soils Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
		Is this Sampling Point Within a Wetland?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Type:			
• Cowardin:		PEMA	
• USFWS Circular 39:		Type 1	
Remarks:			

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>MMPA Power Generation Project – Faribault, MN</u> Applicant/Owner: <u>Minnesota Municipal Power Agency</u> Investigator: <u>ER Slattery</u>	Date: <u>7/16/02, 7/23/02</u> County: <u>Rice</u> State: <u>Minnesota</u>
Do Normal Circumstances exist on the site? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Is the site significantly disturbed (Atypical Situation)? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Is the area a potential Problem Area? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: <u>B-2</u>

VEGETATION

Dominant Plant Species	% Cover	Stratum	Indicator	Dominant Plant Species	% Cover	Stratum	Indicator
1. Corn (Zea mays)	100	H	Upland?	9.			
2.				10.			
3.				11.			
4.				12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC): _____

Remarks: Tall corn showing no signs of stress.

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available Field Observations: Depth of Surface Water: _____ (in.) Depth to Free Water in Pit: _____ (in.) Depth to Saturated Soil: _____ (in.)	Wetland Hydrology Indicators: Primary Indicators <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Remarks: No wetland hydrology indicators.	

SOILS

Map Unit Name (Series and Phase):		LeSueur loam (Map Series 1361)		Drainage Class:		Moderately well drained	
Taxonomy (Subgroup):		Aquic Argiudolls		Field Observations Confirm Mapped Type?		Yes	<input checked="" type="checkbox"/>
						No	<input type="checkbox"/>

Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contract	Texture, Concretions, Structure, etc.
0-18		10YR3/2			Sandy silt w/cobbles

Hydric Soil Indicators:	
<input type="checkbox"/> Histosol <input type="checkbox"/> Histic Epipedon <input type="checkbox"/> Sulfidic Odor <input type="checkbox"/> Aquic Moisture Regime <input type="checkbox"/> Reducing Conditions <input type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Concretions <input type="checkbox"/> High Organic content in Surface Layer in Sandy Soils <input type="checkbox"/> Organic Streaking in Sandy Soils <input type="checkbox"/> Listed on Local Hydric Soils List <input type="checkbox"/> Listed on National Hydric Soils List <input type="checkbox"/> Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	Is this Sampling Point Within a Wetland?	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>					
Hydric Soils Present?	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>					

Type:	
<ul style="list-style-type: none"> Cowardin: _____ USFWS Circular 39: _____ 	
Remarks:	

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>MMPA Power Generation Project – Faribault, MN</u> Applicant/Owner: <u>Minnesota Municipal Power Agency</u> Investigator: <u>ER Slattery</u>	Date: <u>7/16/02, 7/23/02</u> County: <u>Rice</u> State: <u>Minnesota</u>
Do Normal Circumstances exist on the site? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Is the site significantly disturbed (Atypical Situation)? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Is the area a potential Problem Area? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: <u>C-1</u>

VEGETATION

Dominant Plant Species	% Cover	Stratum	Indicator	Dominant Plant Species	% Cover	Stratum	Indicator
1. Pigweed (Amaranthus sp.)	100	H		9. _____			
2. _____				10. _____			
3. _____				11. _____			
4. _____				12. _____			
5. _____				13. _____			
6. _____				14. _____			
7. _____				15. _____			
8. _____				16. _____			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC): _____

Remarks: Field planted in corn but plants stunted and missing in depression area. Instead, the depression is 100% vegetated in short weedy vegetation (pigweed). The species of pigweed could not be identified since it was just beginning to come into flower.

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available Field Observations: Depth of Surface Water: _____ (in.) Depth to Free Water in Pit: _____ (in.) Depth to Saturated Soil: _____ (in.)	Wetland Hydrology Indicators: Primary Indicators <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input checked="" type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Remarks: The soil surface was dry but evidence of earlier inundation includes deeply cracked, crusty caked surface.	

SOILS

Map Unit Name (Series and Phase):		Glencoe clay loam (Map Series 114)		Drainage Class:		Very poorly drained	
Taxonomy (Subgroup):		Cumulic Endoaquolls		Field Observations Confirm Mapped Type?		Yes	<input checked="" type="checkbox"/>
						No	<input type="checkbox"/>

Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contract	Texture, Concretions, Structure, etc.
0-27		10YR2/1			Loam
27-33+		10YR6/1			Clay silt

Hydric Soil Indicators:	
<input type="checkbox"/> Histosol <input type="checkbox"/> Histic Epipedon <input type="checkbox"/> Sulfidic Odor <input type="checkbox"/> Aquic Moisture Regime <input type="checkbox"/> Reducing Conditions <input checked="" type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Concretions <input type="checkbox"/> High Organic content in Surface Layer in Sandy Soils <input type="checkbox"/> Organic Streaking in Sandy Soils <input checked="" type="checkbox"/> Listed on Local Hydric Soils List <input type="checkbox"/> Listed on National Hydric Soils List <input type="checkbox"/> Other (Explain in Remarks)
Remarks:	

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	Is this Sampling Point Within a Wetland?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
Wetland Hydrology Present?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>					
Hydric Soils Present?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>					

Type:	
• Cowardin:	PEMA
• USFWS Circular 39:	Type 1
Remarks: The depression can be considered a farmed wetland.	

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

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Do Normal Circumstances exist on the site? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Is the site significantly disturbed (Atypical Situation)? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Is the area a potential Problem Area? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: <u>C-2</u>

VEGETATION

Dominant Plant Species	% Cover	Stratum	Indicator	Dominant Plant Species	% Cover	Stratum	Indicator
1. Corn (Zea mays)	100	H		9. _____			
2. _____				10. _____			
3. _____				11. _____			
4. _____				12. _____			
5. _____				13. _____			
6. _____				14. _____			
7. _____				15. _____			
8. _____				16. _____			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC): _____

Remarks: Cultivated field planted in corn. Data point in transition area from stunted and missing corn in depression to healthy, non-stressed corn.

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available Field Observations: Depth of Surface Water: _____ (in.) Depth to Free Water in Pit: _____ (in.) Depth to Saturated Soil: _____ (in.)	Wetland Hydrology Indicators: Primary Indicators <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Remarks: The soil surface was dry. Data point is outside of area of depression where evidence of inundation is present.	

SOILS

Map Unit Name (Series and Phase):		Glencoe clay loam (Map Series 114)		Drainage Class:		Very poorly drained	
Taxonomy (Subgroup):		Cumulic Endoaquolls		Field Observations Confirm Mapped Type?		Yes	<input checked="" type="checkbox"/>
						No	<input type="checkbox"/>

Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contract	Texture, Concretions, Structure, etc.
0-26		10YR2/1			Loam
26-33		10YR6/1			Clay silt

Hydric Soil Indicators:	
<input type="checkbox"/> Histosol <input type="checkbox"/> Histic Epipedon <input type="checkbox"/> Sulfidic Odor <input type="checkbox"/> Aquic Moisture Regime <input type="checkbox"/> Reducing Conditions <input checked="" type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Concretions <input type="checkbox"/> High Organic content in Surface Layer in Sandy Soils <input type="checkbox"/> Organic Streaking in Sandy Soils <input checked="" type="checkbox"/> Listed on Local Hydric Soils List <input type="checkbox"/> Listed on National Hydric Soils List <input type="checkbox"/> Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	Is this Sampling Point Within a Wetland?	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>					
Hydric Soils Present?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>					

Type:	
<ul style="list-style-type: none"> Cowardin: _____ USFWS Circular 39: _____ 	
Remarks:	

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>MMPA Power Generation Project – Faribault, MN</u> Applicant/Owner: <u>Minnesota Municipal Power Agency</u> Investigator: <u>ER Slattery</u>	Date: <u>7/16/02, 7/23/02</u> County: <u>Rice</u> State: <u>Minnesota</u>
Do Normal Circumstances exist on the site? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Is the site significantly disturbed (Atypical Situation)? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Is the area a potential Problem Area? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: <u>D-1</u>

VEGETATION

Dominant Plant Species	% Cover	Stratum	Indicator		Dominant Plant Species	% Cover	Stratum	Indicator
1. <u>Phalaris arundinacea (1)</u>	<u>95</u>	<u>H</u>	<u>FACW+</u>		9. _____			
2. <u>Salix exigua (1)</u>	<u><5</u>	<u>S</u>	<u>OBL</u>		10. _____			
3. <u>Ulmus americana (2)</u>	<u><5</u>	<u>T</u>	<u>FACW-</u>		11. _____			
4. <u>Hypericum pyramidatum (2)</u>	<u><5</u>	<u>H</u>	<u>FAC+</u>		12. _____			
5. _____					13. _____			
6. _____					14. _____			
7. _____					15. _____			
8. _____					16. _____			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): _____

Remarks:
 (1) Species found in bottom of drainageway or in lower portion of sideslopes.
 (2) Species found in upper portion of sideslopes.

HYDROLOGY

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input checked="" type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available Field Observations: Depth of Surface Water: _____ (in.) Depth to Free Water in Pit: _____ (in.) Depth to Saturated Soil: <u>0</u> (in.)	Wetland Hydrology Indicators: Primary Indicators <input checked="" type="checkbox"/> Inundated <input checked="" type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input checked="" type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Remarks: Data point taken in bottom of drainageway near toe of slope. Review of historical aerial photography and presence of 60" +/- culvert indicate that drainageway was previously excavated. No date of excavation has been determined. North end of culvert is located at north property line and extends south 20'.	

SOILS

Map Unit Name (Series and Phase):		Glencoe clay loam (Map Series 114)		Drainage Class:		Very poorly drained	
Taxonomy (Subgroup):		Cumulic Endoaquolls		Field Observations Confirm Mapped Type?		Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/>

Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contract	Texture, Concretions, Structure, etc.
0-12		10YR4/2			Clay silt
12+		10YR5/2			Silty sand

Hydric Soil Indicators:

<input type="checkbox"/> Histosol <input type="checkbox"/> Histic Epipedon <input type="checkbox"/> Sulfidic Odor <input checked="" type="checkbox"/> Aquic Moisture Regime <input type="checkbox"/> Reducing Conditions <input type="checkbox"/> Gleyed or Low-Chroma Colors	<input type="checkbox"/> Concretions <input type="checkbox"/> High Organic content in Surface Layer in Sandy Soils <input type="checkbox"/> Organic Streaking in Sandy Soils <input type="checkbox"/> Listed on Local Hydric Soils List <input type="checkbox"/> Listed on National Hydric Soils List <input type="checkbox"/> Other (Explain in Remarks)
--	--

Remarks: Soils appear to be depositional and fully saturated to surface. Saturated condition appears to be permanent.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is this Sampling Point Within a Wetland?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			
Hydric Soils Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			

Type:

- Cowardin: PEMcd
- USFWS Circular 39: Type 3

Remarks: Water in drainageway appears to be permanent since a minnow population water observed along with a frog.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>MMPA Power Generation Project – Faribault, MN</u> Applicant/Owner: <u>Minnesota Municipal Power Agency</u> Investigator: <u>ER Slattery</u>	Date: <u>7/16/02, 7/23/02</u> County: <u>Rice</u> State: <u>Minnesota</u>
Do Normal Circumstances exist on the site? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Is the site significantly disturbed (Atypical Situation)? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Is the area a potential Problem Area? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: <u>D-2</u>

VEGETATION

Dominant Plant Species	% Cover	Stratum	Indicator	Dominant Plant Species	% Cover	Stratum	Indicator
1. <u>Ambrosia trifida</u>	<u>75</u>	<u>H</u>	<u>FAC+</u>	9. _____			
2. <u>Cirsium aruense</u>	<u>10</u>	<u>H</u>	<u>FACU</u>	10. _____			
3. <u>Urtica dioica</u>	<u>5</u>	<u>H</u>	<u>FAC+</u>	11. _____			
4. <u>Lactuca scariola</u>	<u><5</u>	<u>H</u>	<u>FAC</u>	12. _____			
5. _____				13. _____			
6. _____				14. _____			
7. _____				15. _____			
8. _____				16. _____			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): _____

Remarks: Data point taken on top of bank.

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available Field Observations: Depth of Surface Water: _____ (in.) Depth to Free Water in Pit: _____ (in.) Depth to Saturated Soil: _____ (in.)	Wetland Hydrology Indicators: Primary Indicators <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input checked="" type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Remarks: <u>Sufficient hydrology indicators are not present.</u>	

SOILS

[illegible]

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	Is this Sampling Point Within a Wetland?	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>					
Hydric Soils Present?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>					
<u>Type:</u> <ul style="list-style-type: none"> Cowardin: _____ USFWS Circular 39: _____ 									
Remarks:									

Appendix B

Photographs



Photo 1: Looking north at Wetland A. I-35 right-of-way to left.



Photo 2: Looking east at Wetland A and location of Data Point Nos. A-1 and A-2.



Photo 3: Looking southwest at Wetland A.



Photo 4: Looking northeast at Wetland B. Sign marks Enron gas pipeline crossing.



Photo 5: Looking south at Wetland B and at location of Data Point Nos. B-1 and B-2.



Photo 6: Looking east at Wetland C.



Photo 7: Looking west at Wetland C and at location of Data Point Nos. C-1 and C-2.



Photo 8: Looking north at culvert located on north end of Wetland D. Data Point No. D-1 taken at bottom of drainageway in foreground.



Photo 9: Looking south at Wetland D. Photo taken from south end of culvert. Note – soybean field to east and cornfield to west. Data Point No. D-2 taken at top of bank to west.



Photo 10: Looking west near north property line. Drainageway (Wetland D); Wetland C and I-35 in background.



Photo 11: General site photo looking south along east side of site.



Photo 12: Looking northeast at Wetland D taken from a point southwest of the tree line near the midpoint of the drainageway.



Photo 13: Looking northwest at Wetland A taken from pipeline crossing at west property line. Note I-35 to the left.



Photo 14: Looking southeast along drainageway as it leaves Wetland A.



Photo 15: Looking west along drainageway downstream of Wetland A. Note I-35 in background.



Photo 16: Looking east at Wetland E and the drainage ditch (Wetland D) in the background.



Photo 17: Looking northeast at Wetland D. Photo taken from the southwest quadrant of the subject property. Note the soybean field up to the edge of the drainageway.



Photo 18: Looking northwest at Wetland D. Photo taken near west property line. Note soybean field up to edge of sandbar willow.



Photo 19: Looking west (upstream) at main drainageway near west property line.



Photo 20: Looking southwest at drainageway along west property line. Photo taken near the confluence with main drainageway.



Photo 21: Looking west with drainageway along the southern property line to the right. Photo taken from adjoining soybean field to the south of the south property line.

Appendix B

Phase I Historical Review (IMA Consulting Report)



File Copy

August 7, 2002

Michael Donnelly
Project Manager
Stanley Consultants, Inc.
Oakdale Research Park
2658 Crosspark Road, Suite 100
Coralville, IA 52241-3212

RE: Phase I Cultural Resource Survey for the MMPA Project Permitting

Dear Mr. Donnelly,

I am pleased to submit the draft letter report for the above-mentioned project. The enclosed report documents the survey and provides a summary of results and recommendations. Please let me know if you have any comments or questions.

Thank you for the opportunity to work on the MMPA Project Permitting. We hope that you will consider IMA Consulting for future cultural resource projects. Feel free to call with any questions or for further information. I can be reached at (651) 848-0043 or by email at gabe@innarch.com.

Sincerely,
IMA Consulting, Inc.

Gabrielle Bourgerie
Operations Manager

Enclosures: Letter Report
Invoice

Project Description

Stanley Consultants, Inc. of Iowa contracted with IMA Consulting to conduct a Phase I cultural resource inventory of the MMPA project area. Phase I inventory included a pedestrian survey of the entire project area and limited subsurface testing designed to examine the geomorphological potential for intact subsurface archaeological deposits, as well as an architectural history survey of adjacent properties.

The MMPA project survey area comprises approximately 33 acres of cropland in the SE ¼ of the NE ¼ of Section 13, T110N, R21W in Rice County, Minnesota (Figure 1). A residential property comprising a farmhouse, barn, and outbuildings occupy approximately 2.3 acres in the northeast corner of the survey area (Figure 1). The residential area was excluded from the archaeological survey, but was included in the architectural history survey.

The gently rolling landscape of the survey area rises onto a knoll along the western edge of the survey area. The Cannon River is approximately 2,100 meters southeast of the survey area. The soils, which formed in friable glacial till on uplands, belong to the Lester and Hayden Series of loams and the Webster Series of clay loams (Carlson et al 1975). The Lester and Hayden Series supported a pre-settlement biome of deciduous forest while the Webster Series supported water-tolerant prairie grasses.

The survey area was planted in soybeans and corn at the time of the survey. Surface visibility ranged from 20 to 30 percent across the survey area, with the ground surface in the soybean fields visible between rows and within the rows as the crew moved plants aside. The surface visibility in the corn was uniform.

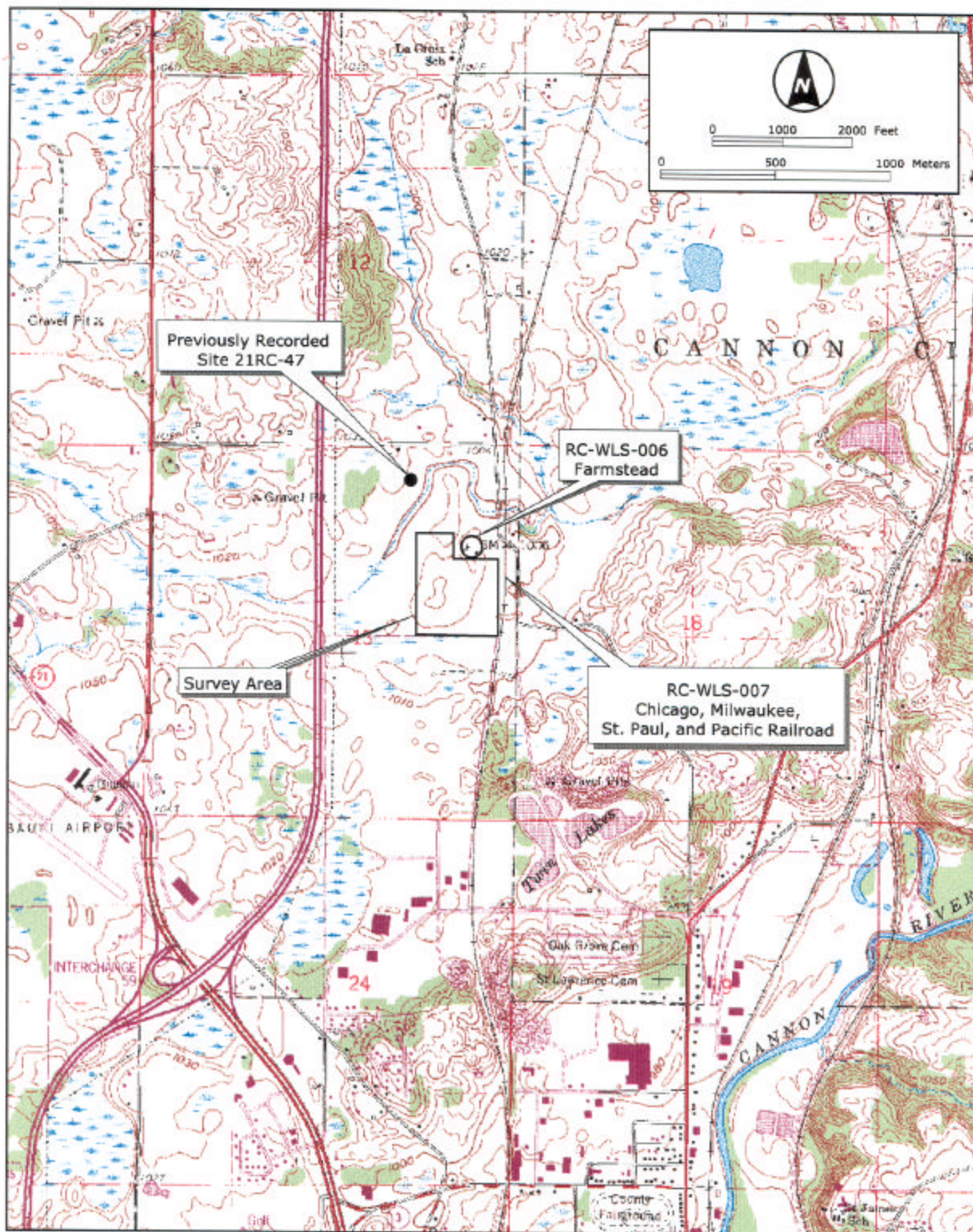
Previously Recorded Archaeological Sites

A review of site files and maps at the Minnesota State Historic Preservation Office (SHPO) verified that one archaeological site (21CR47) has been recorded within one mile of the MMPA project area. The site was identified during a 1996 pipeline survey that traversed the NW ¼ and NE ¼ of Section 13, adjacent to the survey area (Winham et al 1996). The 1996 pipeline survey encompassed a total of 177.36 acres near the MMPA project area and two sites were recorded, for a density of .01 site per acre. The 1996 survey is the only documented archaeological survey conducted in or near the project area.

Site 21CR47 comprises two flakes of "cream/gray banded chert" found on the surface in the NE ¼ of the NW ¼ of the NE ¼ of Section 13, approximately 230 meters northwest of the MMPA project area (Figure 1). The 21CR47 site area had been plowed into the subsoil and the site was recommended not eligible for listing on the National Register of Historic Places.

Previously Recorded Architectural Properties

No architectural resources have been recorded within one mile of the MMPA project area. Five reports on the architectural history of Faribault are on file at the SHPO (Downtown Association 1988; Granger and Kelley 1987; Hoisington 1994a, 1994b; Zahn 1988). None of the reports contains specific information on resources within a mile of the project area.



Source: 7.5 Minute U.S.G.S. Quadrangle: Faribault, 1991

Phase I Cultural Resource Survey
MMPA Project Permitting
Rice County, Minnesota

Project Location

Figure 1

Archaeological Survey Summary

Field personnel from IMA Consulting met Mr. Edwin Slattery of Stanley Consultants at the MMPA project area on July 23, 2002. The IMA Consulting crew included James Lindbeck (senior archaeological technician), and Thomas Madigan (geoarchaeologist). Gabrielle Bourgerie served as principal investigator and project manager. Mr. Slattery reviewed maps of the project area and showed the IMA Consulting crew the boundaries of the survey area. The area was approximately 70 percent soybean crop between one and two feet tall. Approximately 30 percent of the project area was in eight-foot tall corn. Soils in the eastern half of the area (soybean field) are the Webster Series of clay loam. This area has a very low archaeological potential because it is low and wet, and was drained for cultivation.

The corn crop occupied the highest terrain of the survey area and was the only portion that retained any pre-settlement topsoil. West of the corn crop, again in soybeans, the topsoil is eroded and the B-horizon (subsoil) is exposed on the surface. There is no potential for subsurface archaeological resources in this area.

The crew conducted a pedestrian survey of the project area at 10-meter intervals to assess conditions and identify cultural materials visible on the ground surface. Within the portion of the survey area planted in soybeans, the crew focused especially on areas where there were gaps in the crop cover. The survey technique in the soybean field also involved moving the plants to the side while walking to observe the surface. Survey transects were narrowed to 5-meter intervals in the cornrows because this area has the greatest archaeological potential and peripheral visibility was restricted. No cultural materials were identified during pedestrian survey.

After pedestrian survey, two shovel tests were excavated to examine the stratigraphy of the two landforms within the project area that were not wetland prior to cultivation. Shovel test one was excavated in soybeans near the eastern edge of the survey area. Shovel test two was excavated in corn on the high point of the survey area in corn. All excavated soils were screened through 1/4-inch mesh. Shovel test one revealed a complete absence of topsoil. The topsoil in shovel test two was still in place, although plowed into the subsoil. Shovel test profiles are provided below:

Shovel Test One Soil Profile

Depth (cm below surface)	Soil Description
0-15 Ap (plow zone)	Brown (10YR 4/3) loam
15-30 Bt	Dark yellowish brown (10YR 4/4) heavy loam

Shovel Test Two Soil Profile

Depth (cm below surface)	Soil Description
0-23 Ap (plow zone)	Very dark grayish brown (10YR 3/2) loam
23-30 Bt	Dark yellowish brown (10YR 4/4) heavy loam

No cultural materials were recovered during shovel testing.

Architectural History Survey Summary

The Phase I architectural history survey included the project area and all properties that front the project area, including the property within the "Exclusion Area." Two properties were

IMA Consulting, Inc.

MMPA Project Permitting
Phase I Cultural Resource Survey
Rice County, MN

3

identified as part of the architectural history survey: a farmstead (Site RC-WLS-006) and a railroad (Site RC-WLS-007). The survey was conducted simultaneously with the archaeological survey. Barbara Mitchell served as architectural historian.

Site RC-WLS-006

Site RC-WLS-006 is a farmstead that is located in the N ½ of the SE ¼ of the NE ¼ of Section 13, Township 110N, Range 21W. The site consists of five buildings: a single-family dwelling, barn, pump house, and two sheds of undetermined use. Based on the building style and a review of historic plat maps, the house and barn may have been built as early as the 1890s (see site form, attached).

Plat maps present some confusion as to who might have owned the property historically. On the 1900, 1915, and 1916 plat maps, the residence is depicted in the NE ¼ of the NE ¼ of Section 13, rather than in the SE ¼ of the NE ¼ (North West Publishing Company 1900; W. W. Hixson and Company 1916; Webb Publishing Company 1915). Based on the relationship between the residence and the bend in Acorn Trail on the plat maps, we can assume that the residence depicted on the historic maps is the same one associated with RC-WLS-006, even though it is depicted further north than it should be. The plat maps indicate that the residence (along with the rest of the NE ¼ of the NE ¼) was owned by S. G. Benedict in 1900 and 1916, and Jacob J. Friesen in 1915. The plats also indicate that the property in the SE ¼ of the NE ¼ of Section 13 was owned by William Friesen from 1900 through at least 1916. Local histories do not include information on either S. G. Benedict or Jacob J. Friesen. William Friesen had lived in Rice County for about 20 years when the 1915 plat map was published and Jacob Friesen for about 12 years (Webb Publishing Company 1916). No significant historical associations were found for any of the landowners.

Although the farmstead appears to date to the 1890s, most of the buildings have been altered and the farmstead as a whole is no longer intact. None of the individual buildings is a significant example of its property type and none is likely to be found eligible for individual listing on the National Register of Historic Places. The two primary buildings, the house and barn, no longer retain integrity of design, material, or workmanship. One of the sheds is altered significantly and the other appears to be barely 50 years old. Based on a comparison with a 1991 aerial photograph, the farmstead has lost at least one primary structure. The farmstead is no longer associated with the surrounding cropland, which is under separate ownership. Based on these considerations, the farmstead does not appear to retain sufficient integrity of design, setting, feeling, or association for listing on the National Register of Historic Places. No further work is recommended for Site RC-WLS-006.

Site RC-WLS-007

Site RC-WLS-007 is a one-mile segment of the Chicago, Milwaukee, St. Paul and Pacific Railroad. The segment passes north-to-south through the eastern quarter of Section 13, Township 110N, Range 21W. The edge of the railroad right-of-way borders the eastern edge of the project area. Few railroads in Minnesota have been evaluated for listing on the National Register of Historic Places and none have been recorded in Rice County. However, the SHPO generally considers the railroads that appear on the 1886 Railroad Map as being historically significant. The Chicago, Milwaukee, St. Paul and Pacific Railroad is depicted on the map, running from Minneapolis, through Faribault, and south of Austin into Iowa.

In Minnesota, the company that eventually became the Chicago, Milwaukee, St. Paul and Pacific Railroad was incorporated as the Minneapolis and Cedar Valley Railroad on March 1, 1856 (Luecke 1988). The purpose of the railroad was to connect Minneapolis/St. Paul with Milwaukee and Chicago via Prairie du Chien, Wisconsin. Construction began in 1858 in Minneapolis, and although construction was interrupted several times, the first passenger train ran between the Twin Cities and Faribault on December 23, 1865. By that time, the railroad was known as the Minnesota Central Railway (Luecke 1988:1-6). In 1868, the line was completed between Minneapolis and Chicago and was known as the Milwaukee and St. Paul Railway Company, or the "St. Paul" (Prosser 1966). The railroad may be significant as one of the first railroads to be built between Faribault and the Twin Cities.

Integrity considerations for railroad corridors are still being developed in Minnesota. However, the integrity considerations for other linear features, such as military roads and trails, can be applied to railroad segments in lieu of formalized criteria. For roads and trails, there are five integrity considerations:

- 1) route,
- 2) physical appearance,
- 3) sense of function or destination,
- 4) setting, and
- 5) other associational qualities, such as name or historical associations.

The railroad segment passing through Section 13 is probably part of the Minnesota Central Railway line that opened in December 1865. On all available historic county plat maps, the railroad is depicted on approximately the same alignment as it is now (Northwest Publishing Company 1900; W. W. Hixson and Company 1916; Webb Publishing Company 1915). The physical appearance of the segment most likely has not changed. There is still a noticeable railroad grade, and the rails and wooden ties are still intact. Because the line is still in use, there is a definite sense of function and destination. The setting is much as it might have been over a hundred years ago, with shrubs and trees separating farmland from the railroad right-of-way. Other historical associations have not been explored as part of this project. However, other properties associated with the Chicago, Milwaukee, St. Paul and Pacific railroad have been recorded in Minnesota, including the passenger depot in Northfield (RC-NFC-244).

Summary and Recommendations

No archaeological resources were identified within the MMPA project area, and there is little or no potential for intact archaeological remains because of plowing, erosion, and landscape setting.

The farmstead, Site RC-WLS-006, does not appear to retain sufficient integrity of design, setting, feeling, or association for listing on the National Register of Historic Places. No further work is recommended for this site.

Based on the information collected during this survey, we can reasonably assume that Site RC-WLS-007 is eligible for listing on the National Register of Historic Places. However, the MMPA project is not expected to have an adverse effect on the National Register-eligibility of the site. The 250-megawatt combined-cycle, gas-fired power plant will only occupy 20 acres of the 33-acre project area. Although the final design for the proposed plant has not been determined, the building will have a modern commercial or industrial appearance, possibly

with natural lines and colors. The final design could be altered by a number of details, including bush and tree plantings, fences, paint colors, and lighting. The Federal Aviation Administration may also require a light or lights on the plant stack. However, lighting the stack would not create a new effect in the surrounding area, because the light will blend with the lights of an existing power plant to the east and an industrial/commercial area to the south. There will be no direct impacts to the railroad grade or the bordering vegetation. Indirect impacts include possible visual and audible impacts that are not expected to have adverse effect on the National Register-eligibility of the railroad segment. No further work is recommended for Site RC-WLS-007 unless the project is changed.

No additional cultural resources work is recommended for the MMPA Project area, provided the planned impacts to the site do not change.

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1996 *An Intensive Cultural Resources Survey for Portions of Northern Natural Gas Company's Proposed Peak Day 2000 Expansion in Carver, Rive, Scott, Washington and Wright Counties, Minnesota*. Archeological Contract Series No. 115, Archeology Laboratory, Augustana College, Sioux Falls, SD.

Zahn, T. R.

1988 *Faribault Heritage Preservation Commission Planning Report*. Submitted to the Faribault Heritage Preservation Commission, July 1988. Copies available from the Minnesota State Historic Preservation Office, St. Paul, Minnesota (Report Number RC-88-1H).

Architectural History Inventory

Long Form
Page 1

RC-WLS-006

Farmstead

17250 Acorn Trail, Wells Twp, Rice County, Minnesota

(Long forms are used for properties that meet minimum age and integrity considerations for full recordation)

GENERAL INFORMATION

Survey

Field I.D. S1
Inventory Level Phase I Inventory
Survey Date July 23, 2002
Surveyor(s) B. Mitchell

Survey Notes

Surveyor did not have permission to access the property. Inventory was conducted from public right-of-way and from the cropland that surrounds the farmyard.

Site Information

Buildings House, barn, pump house, two sheds
Vegetation Deciduous and coniferous trees
Land use Property is a single-family residence. Resident does not own surrounding cropland.
Original Site? Yes

Site Notes

The farmyard is approximately 1/8 mile off the road, and is bordered on the E and S by soybean crops and on the N and W by cornrows. The landscape rises gently toward the center and is dotted with deciduous trees.

LOCATION

Quad Faribault
T 110N R 21W Sec. 13
N 1/2 SE 1/4 NE 1/4
UTM Z 15 E 477319 N 4909173



PHOTOGRAPH: Overall Site, from Acorn Trail

Roll 1 Frame 5 Date 07.23.02 Facing SW



Architectural History Inventory

Long Form
Page 2

RC-WLS-006

Farmstead

17250 Acorn Trail, Wells Twp, Rice County, Minnesota

(Long forms are used for properties that meet minimum age and integrity considerations for full recordation)

DESCRIPTION OF PRIMARY BUILDING

Function

Original Function Single-family residence
Current Function Single-family residence

Form/Design

Style Faint remnants of Queen Anne
Commercial Style n/a
Plan Shape Rectangle (originally "T")
of Stories 1 1/2
Structure Wood Frame
Roof Shape Cross-gable
Roof Details Simple bargeboard in gable ends
Window Type(s) Old and new: fixed, casement, 1-over-1 and 2-over-1 double-hung
Signage n/a

Materials

Foundation Concrete Block
Wall (primary) Modern wood and composition board siding
Wall (secondary) Horizontal wood siding (narrow exposure)
Roofing Composition asphalt shingles

Note on Interior (if applicable)

Not accessible

Note on Architecture

HISTORY

Construction

Date 1890-1900
Owner S.G. Benedict (1900)
Architect Unknown

Alterations

Date unknown
Owner unknown

Note on Alterations

House is severely altered, including additions, in-fill of porches, and replacement of much of the original wall cladding, roofing materials, and windows.

Note on History

On the 1900, 1915, and 1916 plat maps, the residence is depicted in the NE 1/4 of the NE 1/4 of Section 13, rather than in the SE 1/4 of the NE 1/4. However, based on the relationship between the residence and the bend in Acorn Trail on the plat maps, we can assume that this is the same property. The plat maps indicate that the residence (along with the rest of the NE 1/4 of the NE 1/4) was owned by S. G. Benedict in 1900 and 1916, and Jacob J. Friesen in 1915. The plats also indicate that the property in the SE 1/4 of the NE 1/4 of Section 13 was owned by William Friesen in 1900, 1915, and 1916. William Friesen had lived in Rice County for about 20 years when the 1915 plat map was published and Jacob Friesen for about 12 years (Webb Publishing Company 1916). No significant historical associations were found for any of the men.

PHOTOGRAPH: House, from soybean field south of farmyard

Roll 1 Frame 15 Date 07.23.02 Facing NW



Architectural History Inventory

Long Form
Page 3

RC-WLS-006

Farmstead

17250 Acorn Trail, Wells Twp, Rice County, Minnesota

(Long forms are used for properties that meet minimum age and integrity considerations for full recordation)

CONDITION/INTEGRITY

Design Integrity	Poor to fair
Material Integrity	Poor
Site Integrity	Poor to fair
Window Integrity	Most original windows replaced/ openings intact

Note on Integrity

The two primary buildings, the house and barn, no longer retain integrity of design, material, or workmanship. One of the sheds has significant alterations and the other appears to be barely 50 years old. Based on a comparison with a 1991 aerial photograph, the farmstead has lost at least one primary structure. The farmstead is no longer associated with the surrounding cropland, which is under separate ownership. Neither the individual buildings nor the farmstead as a whole retain sufficient integrity of design, setting, materials, workmanship, feeling, or association for listing on the National Register of Historic Places.

REFERENCES

North West Publishing Company

1900 *Plat Book of Rice County, Minnesota: Compiled from County Records and Actual Surveys*. Northwest Publishing Company, Philadelphia.

W. W. Hixson and Company

1916 *Plat Book of Minnesota*. W. W. Hixson, Rockford, Illinois.

Webb Publishing Company

1915 *Atlas and farm directory with complete survey in township plats, Rice County, Minnesota*. Webb Publishing Company, St. Paul.

SIGNIFICANCE

Level of Significance	Local
State Context	Railroads and Agricultural Settlement, 1870-1940
NR Eligibility	Not Eligible
NR Criteria	n/a

Note on Significance

Although the farmstead appears to date to the 1890s, most of the buildings have been altered and the farmstead as a whole is no longer intact. None of the individual buildings is a significant example of its property type and none is likely to be found eligible for individual listing on the National Register of Historic Places. No significant historical associations were found.

Architectural History Inventory

Long Form
Page 4

RC-WLS-006

Farmstead

17250 Acorn Trail, Wells Twp, Rice County, Minnesota

(Long forms are used for properties that meet minimum age and integrity considerations for full recordation)

PHOTOGRAPH: Barn and outbuildings, from southwest corner of property

Roll 1

Frame 11

Date 07.23.02

Facing NE



PHOTOGRAPH: Outbuildings, from northwest corner of property

Roll 1

Frame 7

Date 07.23.02

Facing SE



Architectural History Inventory

Long Form
Page 1

RC-WLS-007

Chicago, Milwaukee, St. Paul and Pacific Railroad Segment
Wells Twp, Rice County, Minnesota

(Long forms are used for properties that meet minimum age and integrity considerations for full recordation)

GENERAL INFORMATION

Survey

Field I.D. S2
Inventory Level Phase I
Survey Date 07/23/2002
Surveyor(s) B. Mitchell

Survey Notes

Only the portion of the railroad segment that is located in the SE $\frac{1}{4}$ of the NE $\frac{1}{4}$ of Section 13 was investigated as part of this project.

Site Notes

The railroad is actively being used. Acorn Trail is a north-south road that parallels the railroad to the east in the SE $\frac{1}{4}$ of the NE $\frac{1}{4}$ of Section 13, crosses the tracks at approximately the quarter-section line, and then parallels the railroad to the west in the NE $\frac{1}{4}$ of the NE $\frac{1}{4}$ of Section 13. The railroad is bordered on either side by shrubs, trees, and tall grasses.

LOCATION

Quad	Faribault (1960)			
T	110N	R	21W	Sec. 13
	E $\frac{1}{2}$		E $\frac{1}{2}$	
(N) UTM Z	15	E	477464	N 4909626
(S) UTM Z	15	E	477337	N 4907987



PHOTOGRAPH: Chicago, Milwaukee, St. Paul and Pacific Railroad, from Acorn Trail.

Roll 1 Frame 1 Date 07.23.02 Facing South



Architectural History Inventory

Long Form
Page 2

Chicago, Milwaukee, St. Paul and Pacific Railroad Segment
Wells Twp, Rice County, Minnesota

RC-WLS-007

(Long forms are used for properties that meet minimum age and integrity considerations for full recordation)

HISTORY

In Minnesota, the company that eventually became the Chicago, Milwaukee, St. Paul and Pacific Railroad was incorporated as the Minneapolis and Cedar Valley Railroad on March 1, 1856 (Luecke 1988). The purpose of the railroad was to connect Minneapolis/St. Paul with Milwaukee and Chicago via Prairie du Chien, Wisconsin. Construction began in 1858 in Minneapolis, and although construction was interrupted several times, the first passenger train ran between the Twin Cities and Faribault on December 23, 1865. By that time, the railroad was known as the Minnesota Central Railway (Luecke 1988:1-6). In 1868, the line was completed between Minneapolis and Chicago and was known as the Milwaukee and St. Paul Railway Company, or the "St. Paul" (Prosser 1966).

CONDITION/INTEGRITY

The railroad segment passing through Section 13 is part of the Minnesota Central Railway line that opened in December 1865. On all available historic county plat maps, the railroad is depicted on approximately the same alignment as it is now (Northwest Publishing Company 1900; W. W. Hixson and Company 1916; Webb Publishing Company 1915). The physical appearance of the segment most likely has not changed. There is still a noticeable railroad grade, and the rails and wooden ties are still intact. Because the line is still in use, there is a definite sense of function and destination. The setting is much as it might have been over a hundred years ago, with shrubs and trees separating farmland from the railroad right-of-way. Other historical associations have not been explored as part of this project. However, other properties associated with the Chicago, Milwaukee, St. Paul and Pacific railroad have been recorded in Minnesota, including the passenger depot in Northfield (RC-NFC-244).

SIGNIFICANCE

Level of Significance Local, State

State Context Railroads and Agricultural Settlement, 1870 - 1940

NR Eligibility May be eligible

NR Criteria Criterion A

The railroad may be significant as one of the first railroads to be built between Faribault and the Twin Cities.

REFERENCES

Luecke, J. C.

1988 *Dreams, Disasters, and Demise: The Milwaukee Road in Minnesota*. Grenadier Publications, Eagan, Minnesota.

North West Publishing Company

1900 *Plat Book of Rice County, Minnesota: Compiled from County Records and Actual Surveys*. Northwest Publishing Company, Philadelphia.

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W. W. Hixson and Company

1916 *Plat Book of Minnesota*. W. W. Hixson, Rockford, Illinois.

Webb Publishing Company

1915 *Atlas and farm directory with complete survey in township plats, Rice County, Minnesota*. Webb Publishing Company, St. Paul.

Appendix C

U.S. Fish and Wildlife Correspondence



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Twin Cities Field Office
4101 East 80th Street
Bloomington, Minnesota 55425-1665

AUG - 8 2002

Iowa City Files
16245/Regulatory
Correspondence
RECEIVED
STANLEY CONSULTANTS

AUG 12 2002

CIVIL/ARCHITECTURE

Ms. Karmen Heim
Civil Engineer
Stanley Consultants, Inc.
Stanley Building
225 Iowa Avenue
Muscatine, Iowa 52761

Dear Ms. Heim:

This responds to your letter dated July 24, 2002, requesting information on federally threatened (T) and endangered (E) species for a proposed 250 MW Combined Cycle Plant Project near Faribault in Rice County, Minnesota. The project site is located in T110N, R21W, Sec.13.

The prairie bush clover (*Lespedeza leptostachya*) (T), and Minnesota dwarf trout lily (*Erythronium propullans*) (E) are listed as federally threatened or endangered in Minnesota and documented to occur in Rice County. However, given the location and type of activity proposed, we have determined that the proposed project as described in your letter is not likely to adversely affect any federally listed or proposed threatened or endangered species or adversely modify their critical habitat. This precludes the need for further action on this project as required under section 7 of the Endangered Species Act of 1973, as amended. However, if the project is modified or new information becomes available which indicates that listed species may occur in the affected area, consultation with this office should be reinitiated.

We appreciate the opportunity to comment and look forward to working with you in the future. If you have questions regarding our comments, please call Mr. Gary Wege of my staff at (612) 725-3548, extension 207.

Sincerely,

Dan P. Stinnett
Field Supervisor

RECEIVED
S.E.I. CORALVILLE

AUG 13 2002

STANLEY CONSULTANTS
GROUP



Stanley Consultants inc.



FARIBAULT ENERGY PARK MAJOR FACILITIES	
FACILITY	
A.	HEAT RECOVERY STEAM GENERATOR
B.	STACK
C.	NATURAL GAS TURBINE GENERATOR
D.	STEAM TURBINE GENERATOR
E.	WATER STORAGE TANK
F.	FUEL OIL STORAGE TANKS
G.	COOLING TOWER
H.	ELECTRICAL SUBSTATION
I.	TRANSMISSION INTERCONNECTION
J.	STEAM TURBINE BUILDING
K.	NATURAL GAS VALVE & METERING STATION
L.	WATER WELL
M.	CREATED WETLAND
N.	SEPTIC ABSORPTION FIELD
O.	STORMWATER DETENTION POND
P.	PUBLIC PARKING & INTERPRETIVE DISPLAY AREA
Q.	NOT USED
R.	FUTURE GREENHOUSE
S.	NATURAL GAS SUPPLY PIPELINE
T.	PLANT EFFLUENT PIPELINE
U.	ENERGY EDUCATION CENTER
V.	(HYDRO, SOLAR, WIND, OTHER)



CONCEPT PLAN

Concept Plan
Preferred Site
Proposed Transmission Lines
Figure 3



Stanley Consultants inc.



CONCEPT PLAN

Concept Plan
Alternate Site
Proposed Transmission Lines
Figure 4